DRAFT
Environmental Impact Report

201 SPEAR STREET OFFICE BUILDING

EE 80.337
February 1982

Publication Date: February 12, 1982
Public Comment Period: February 12, 1982 through March 29, 1982
Public Hearing Date: March 18, 1982

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201 SPEAR STREET JOINT VENTURE

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Written comments should be sent to the Office of Environmental Review, 45 Hyde Street, San Francico, California 94102

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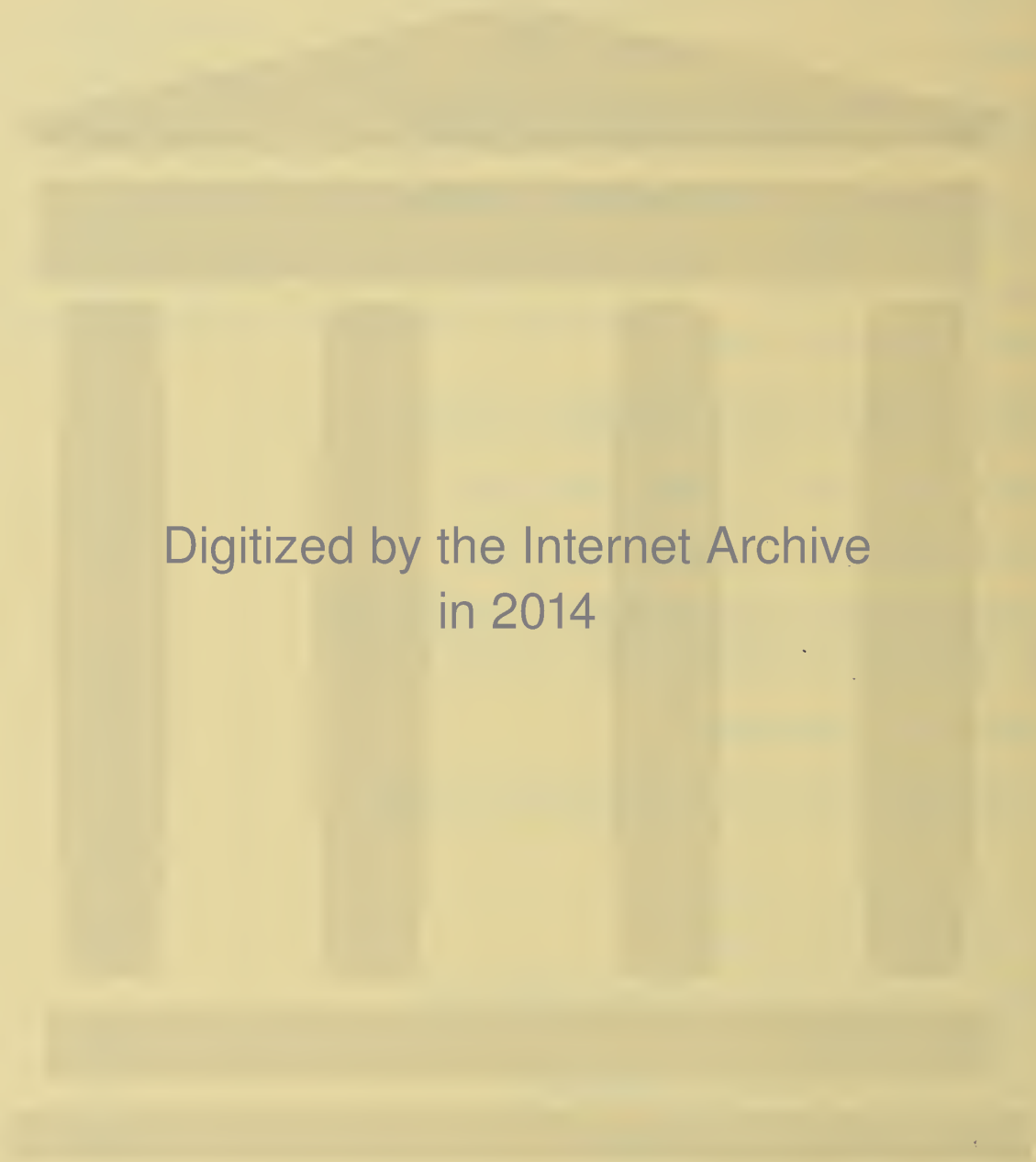

I. SUMMARY

A. DESCRIPTION

The proposed 201 Spear Street office building would be located on the southeast corner of Howard and Spear Streets. The site includes lots 16, 17 and 26, parts of lots 1 and 19 of Assessor's Block 3741. The project sponsor, 201 Spear Street, a joint venture between Southern Pacific Development Company and the Equitable Life Assurance Society of the United States, desires to provide an office building with space to lease.

The proposed structure consists of a 248-foot, 18-story office building, with a gross floor area of approximately 262,000 square feet. With a basement level containing 32,000 square feet, the total building area comes to 294,000 square feet.

The main pedestrian entry would face Spear Street and would contain a lobby leading to a bank of 6 elevators. A landscaped plaza would be situated at street level on the south side of the building, maximizing solar exposure.

Fifty parking spaces would be located in the basement. Access would occur on Spear Street for both cars and freight vehicles.

Construction would be expected to take place over an 18-month period, subsequent to project approvals.

The project site is zoned C-3-S. The basic floor area ratio (FAR) permitted is 7:1. The allowable gross floor area for the site is 263,977 square feet.

The height and bulk district for the site is 240-G which allows a maximum building height of 240 feet, with a maximum building length of 170 feet and a maximum diagonal dimension of 200 feet above a height of 80 feet. The building length and diagonal dimension would be exceeded on floors 7 and 8, and the parapet and mechanical penthouse would exceed the allowable heights by 4 and 6.5 feet respectively, requiring the conditional use authorization of a Planned Unit Development for the project. The maximum building height including the mechanical level and parapet would be 262.5 feet.

B. INITIAL STUDY

An initial study was prepared for the 201 Spear Street project to identify potential environmental issues resulting from the proposed project. The EIR covers those issues in depth. Certain potential environmental issues determined to be insignificant are not discussed in the EIR. They include land use compatibility, glare, relocation or displacement of housing or businesses, objectionable odors, burning of materials, utilities and public services, biology and hazards.

C. ENVIRONMENTAL IMPACTS

Land Use. The proposed project would replace the existing surface parking lot on the site with an office building of approximately 262,000 gross square feet at an FAR of about 7:1.

Visual Quality and Urban Design. The proposed structure would rise 248 feet to the parapet of the 18th floor. Building plans feature 3 setbacks, serrated exteriors on the upper 16 floors, and windows offset at a 30^{o} angle, all designed to add visual interest to the building. The proposed project would become another element defining the City's skyline. Views of the East Bay from the upper stories of 2 adjacent highrises to the west of Spear Street would be blocked. Views to the Financial District from the elevated freeway to the south would also be blocked.

Employment. The proposed 201 Spear Street project would provide about 1,048 permanent office jobs. Through the economic multiplier effect the 1,048 jobs would support a projected additional 1,010 jobs throughout the Bay Area. Project construction would generate about 330 person-years of employment, approximately 220 full-time positions over an 18- month period.

Housing. It is estimated that 157 to 420 workers may move into the City as a result of the proposed project, increasing the housing demand by 112 to 233 units in San Francisco.

Fiscal Factors. The net fiscal impact would be to generate a net revenue of about $223,000 to $260,000. Public service costs, excluding Muni, would be about $59,500 in 1980-81 dollars. The likely impact of project users on Muni could cost $47,500 based on daily peak hour trips.

Transportation. The proposed project would generate approximately 4,100 daily person-trips of which about 2,350 would be work trips and 1,750 would be non-work trips. About 820 of the daily trips would occur during the evening peak hour.

Two hundred ninety five peak hour auto trips would be produced by the proposed project. The 201 Spear project would amount to about 2-3% of the auto traffic volume generated by cumulative proposed downtown development. A need for 470 parking spaces would be created by the proposed project. Fifty spaces would be provided.

The proposed project would generate an increase of about 1% in the ridership of all modes of public transit.

Noise. During pile-driving, the noisiest construction operation, noise levels outside the closest office buildings would reach as high as 99 dBA, and noise levels inside would reach 69 dBA.

Climate. The proposed building would be sheltered by existing structures so that ground level wind accelerations would not be a problem. Shadows caused by the proposed project would affect the intersection of Howard and Spear Streets in the morning and Howard Street in the afternoon, in all seasons.

Geology and Seismicity. Major on-site impacts related to an earthquake of Richter magnitude 6 or greater within the anticipated useful lifetime of the building include lateral spreading, lurching and liquefaction. Flooding by tsunami is also a potential hazard.

D. CUMULATIVE EFFECTS OF DOWNTOWN DEVELOPMENT

The proposed project would become part of the downtown office space under construction or proposed to be added to the existing office space. Demand for housing in San Francisco is expected to increase due to cumulative downtown development. This development would increase traffic congestion and exacerbate an existing parking problem. Peak period ridership on public transit would increase and the concentration of pollutants from auto emissions would rise.

E. MITIGATION MEASURES

A stepped building design and bay window would add visual interest. Use of a brick skin would relate the proposed structure to its older neighbors. A sheltered plaza facing south would offer a human scale outdoor space and have sunlight in the morning hours.

The project sponsor would encourage transit use by employees by on-site sale of transit passes, and promoting an employee carpool/vanpool system. A flexible working hours system would be encouraged. Safe and convenient pedestrian access would be maintained throughout the construction period.

The project sponsor would agree to cause the construction and/or rehabilitation of an indeterminate number of housing units in San Francisco. A pile-supported structure is planned in order to mitigate potential impacts caused by lateral spreading, lurching, and liquefaction. To mitigate noise impacts piles would be pre-drilled and pile-driving would take place after office hours and on weekends when the least amount of people would be affected. The project sponsor would require the contractor to implement a twice-daily watering program to reduce the likelihood of fugitive dust and particulates caused by construction activities.

The project sponsor has planned to incorporate energy conservation measures which would be more stringent than the minimum state requirements into the project design.

If historical artifacts are discovered during construction, work could be suspended for up to 4 weeks for inspection and retrieval, if appropriate.

Certain mitigation measures which would reduce the impacts of the project, but to which the project sponsor has not agreed are presented in the areas of visual quality, housing and transportation.

F. ALTERNATIVES

Alternatives to the proposed project considered include the no project alternative, commercial use other than offices, no on-site parking, combined office and residential uses, and an office structure incorporating features outlined in Guiding Downtown Development.

II. PROJECT DESCRIPTION

A. LOCATION

The site of the proposed 201 Spear Street office building is on the southeast corner of Howard and Spear Streets, Assessor's Block 3741 (lots 16, 17 and 26, and portions of lots 1 and 19) San Francisco, California. The site area is 37,711 square feet. The general location of the project site in San Francisco is shown on Figure 1, page 6; the more specific location in San Francisco is shown on Figure 2, page 7.

B. OBJECTIVES OF SPONSOR

The project sponsor, 201 Spear Street, a joint venture of Southern Pacific Development Company and the Equitable Life Assurance Society of the United States, desires to provide an office building with space to lease. Prospective tenants would include business and professional firms; no specific tenants have been identified at this time. The project sponsor would seek to receive a profit on investment capital, with project demand based on existing trends and leasing patterns in the area indicating a continued demand for office space in San Francisco.

C. PROJECT CHARACTERISTICS AND SCHEDULING

The proposed structure would contain 18 floors rising 248 feet to the parapet of the top floor (Figure 3, page 8). The building would contain a total gross floor area of approximately 262,000 square feet. The proposed structure would contain less than the maximum allowable gross floor area permitted by a 7:1 floor area ratio (FAR) which is 263,997 square feet (Figures 4, 5 and 6, pages 9, 10 and 11). The basement level would contain 32,000 square feet which brings the total building area to 294,000 square feet (Figure 7, page 12).[1] The proposed project would have a gross leaseable area of approximately 234,000 square feet. Assuming retail tenants can be found for the 5,200 square feet of leasable space on the ground floor, the project would provide 229,000 square feet of office space. Without the retail tenants, the full 234,000 square feet would be placed in office use.

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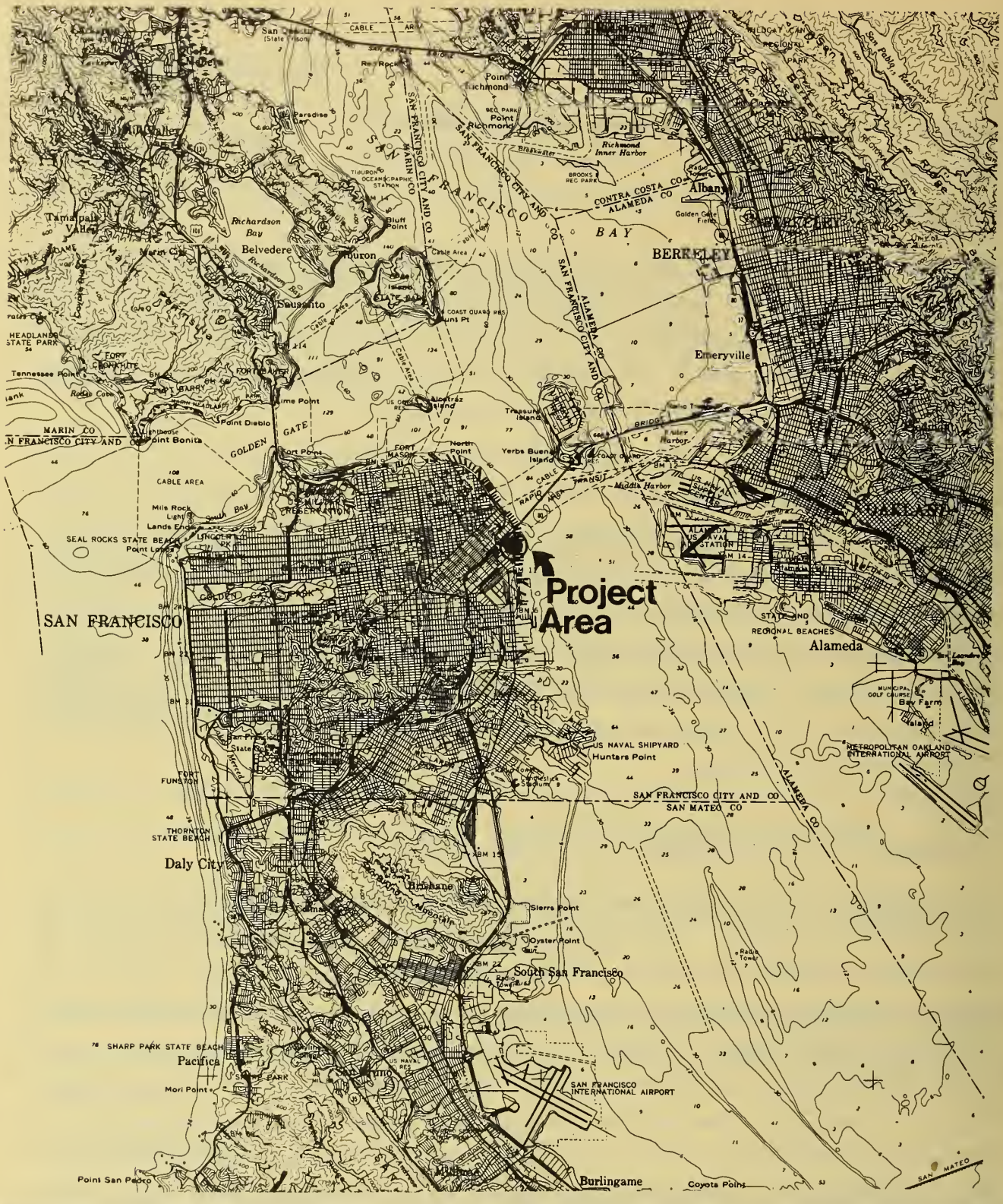
[1] Basement levels are not included in the FAR calculations. City and County of San Francisco Planning Code, Section 102.8.



Regional Location Map

North

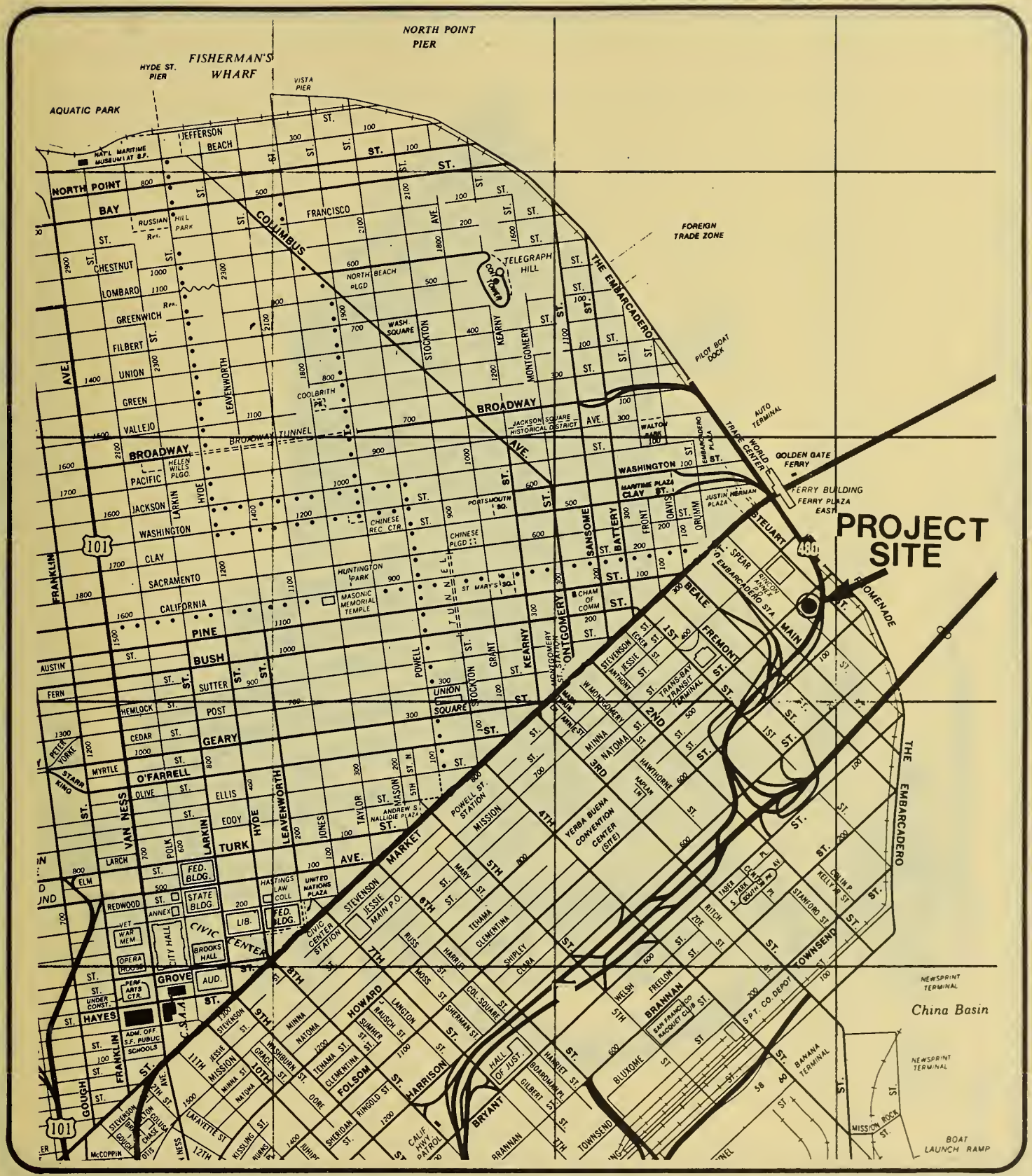
0 1 2 4

Scale Miles

Source: U.S.G.S.

201 SPEAR

Figure No.1



Site Location Map

Basic map reproduced by permission of the California State Automobile Association, copyright owner.

201 SPEAR

North

0 500 1000 2000

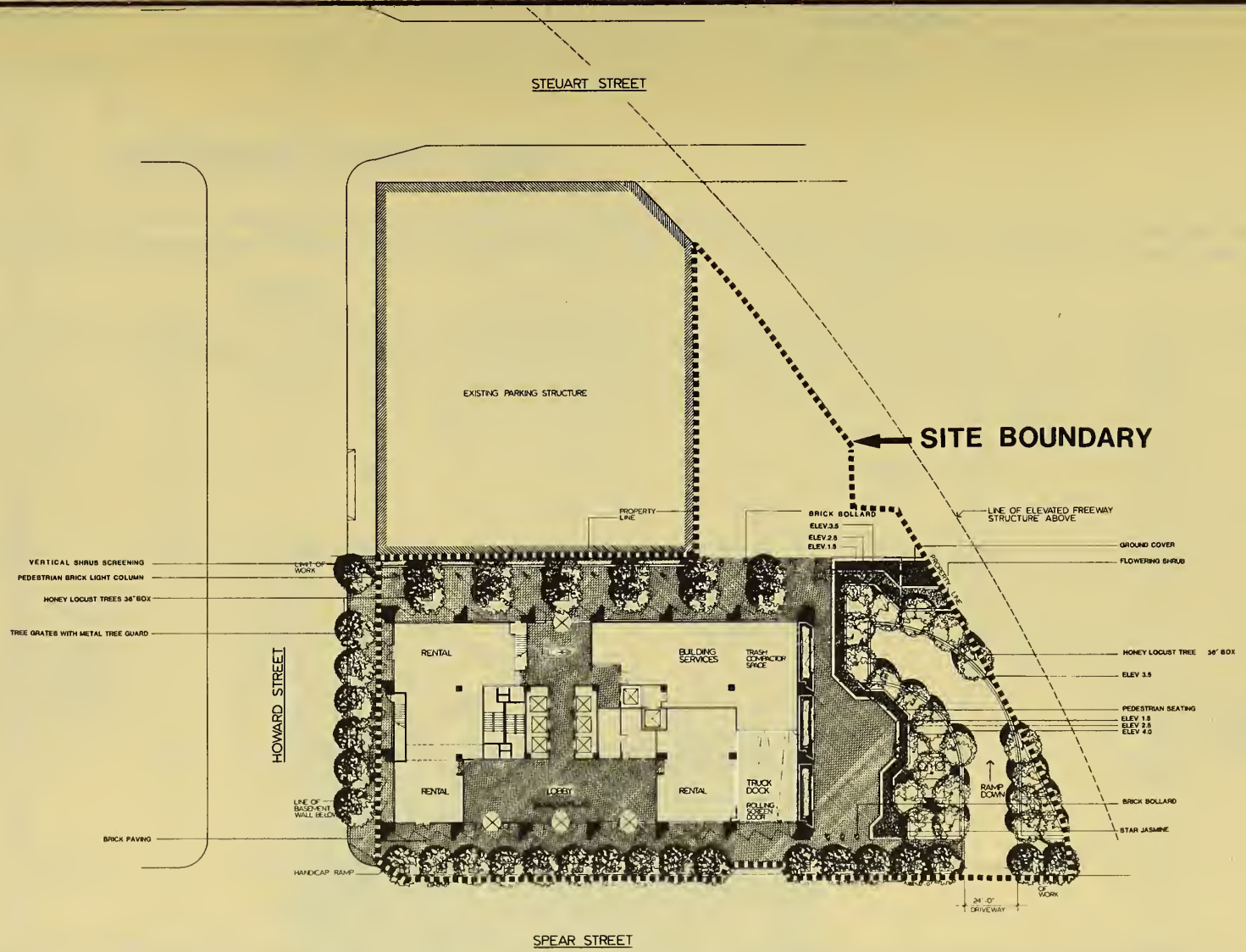
Scale Feet

Figure No. 2

Proposed Project as viewed from Spear Street at Folsom Street

Source: Primiani-Weaver, Architects
201 SPEAR

Figure No. 3



North

0 30 60 120

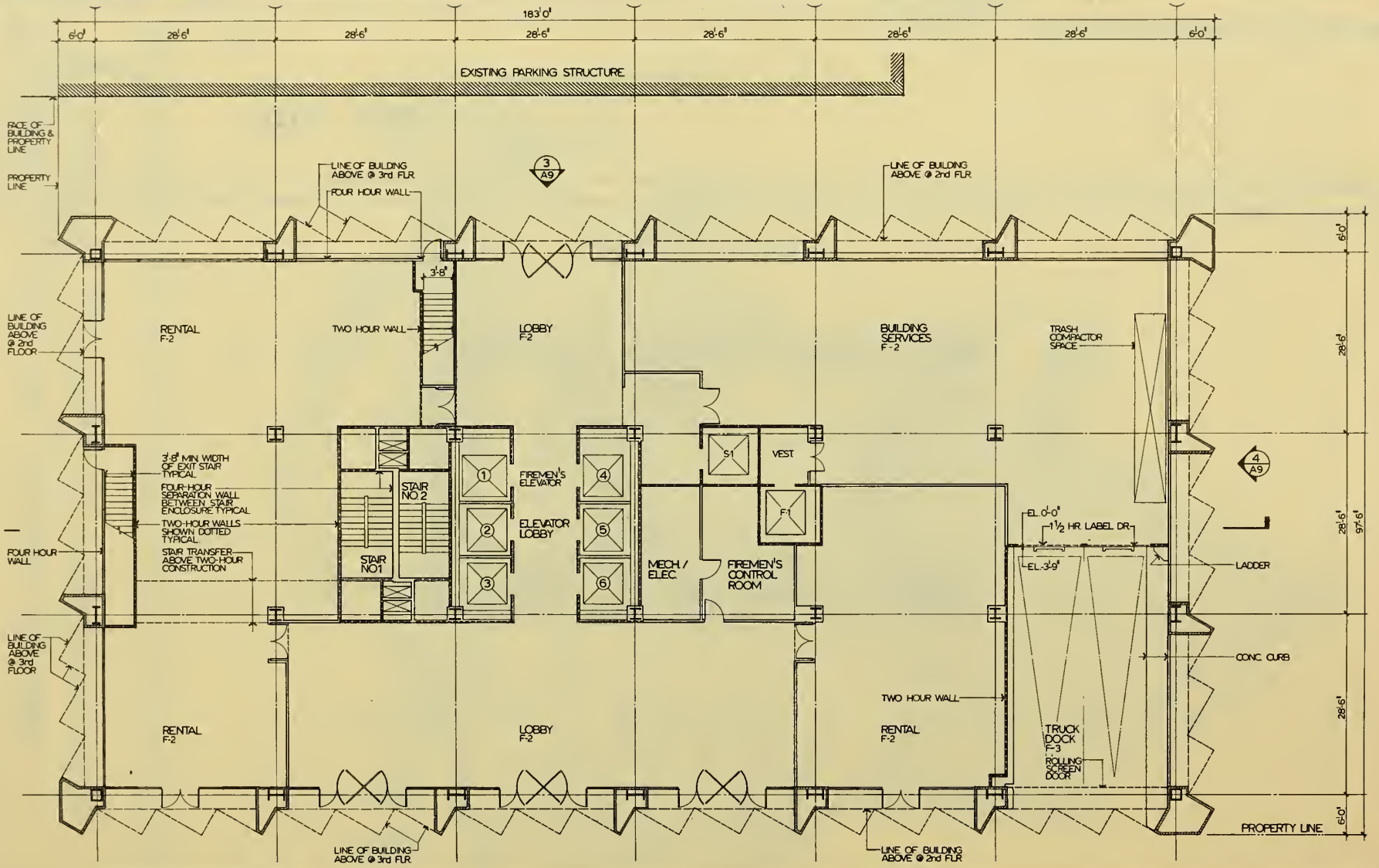
Scale Feet

Site Plan

Figure No. 4

Source: Primiani-Weaver, Architects

201 SPEAR



North

0 10 20 40

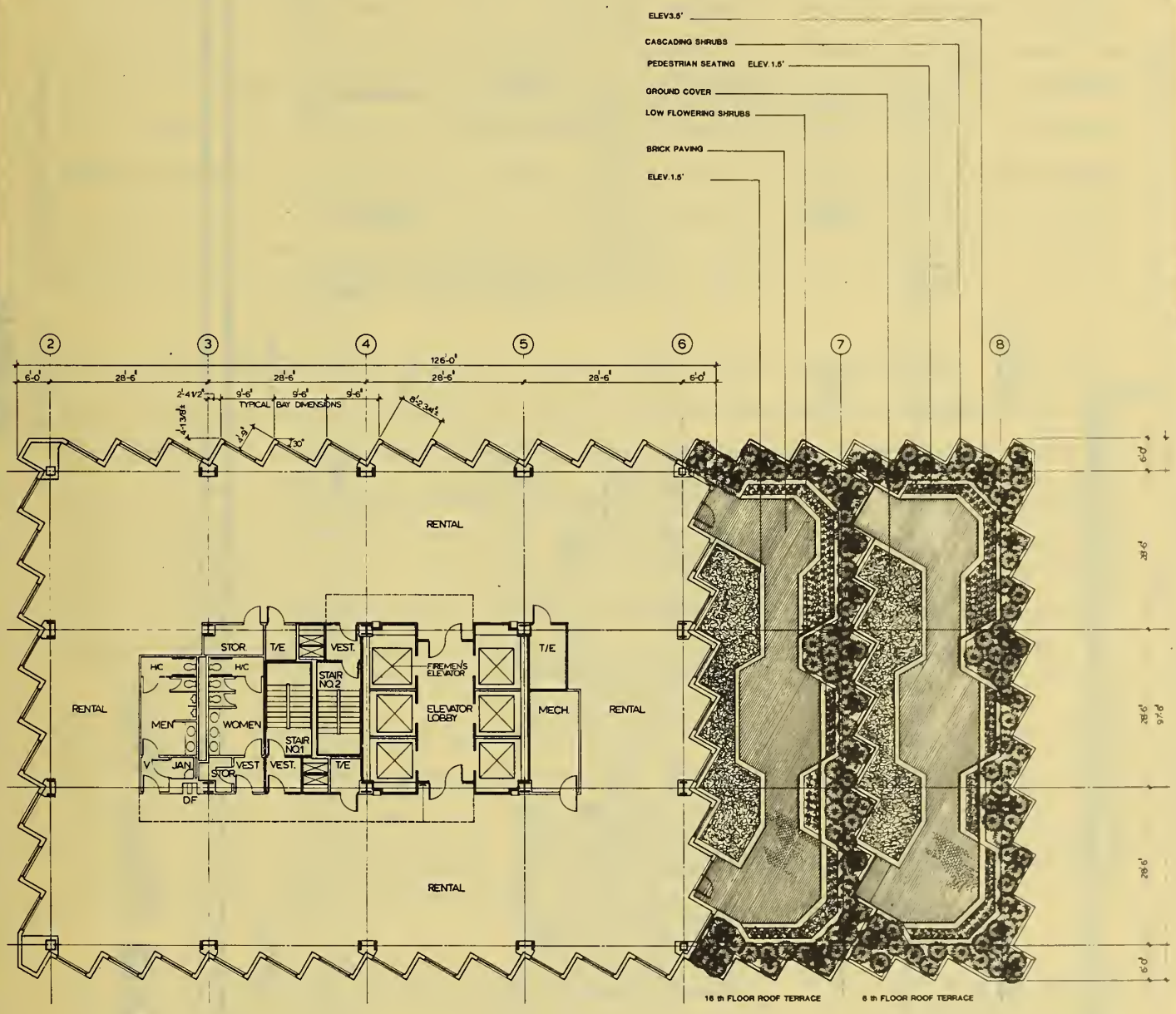
Scale Feet

Ground Floor Plan

Source: Primiani-Weaver, Architects

Figure No. 5

201 SPEAR



Typical Floor Plan

Showing Roof Terraces at 8th and 16th Floors

Source: Primiani-Weaver, Architects

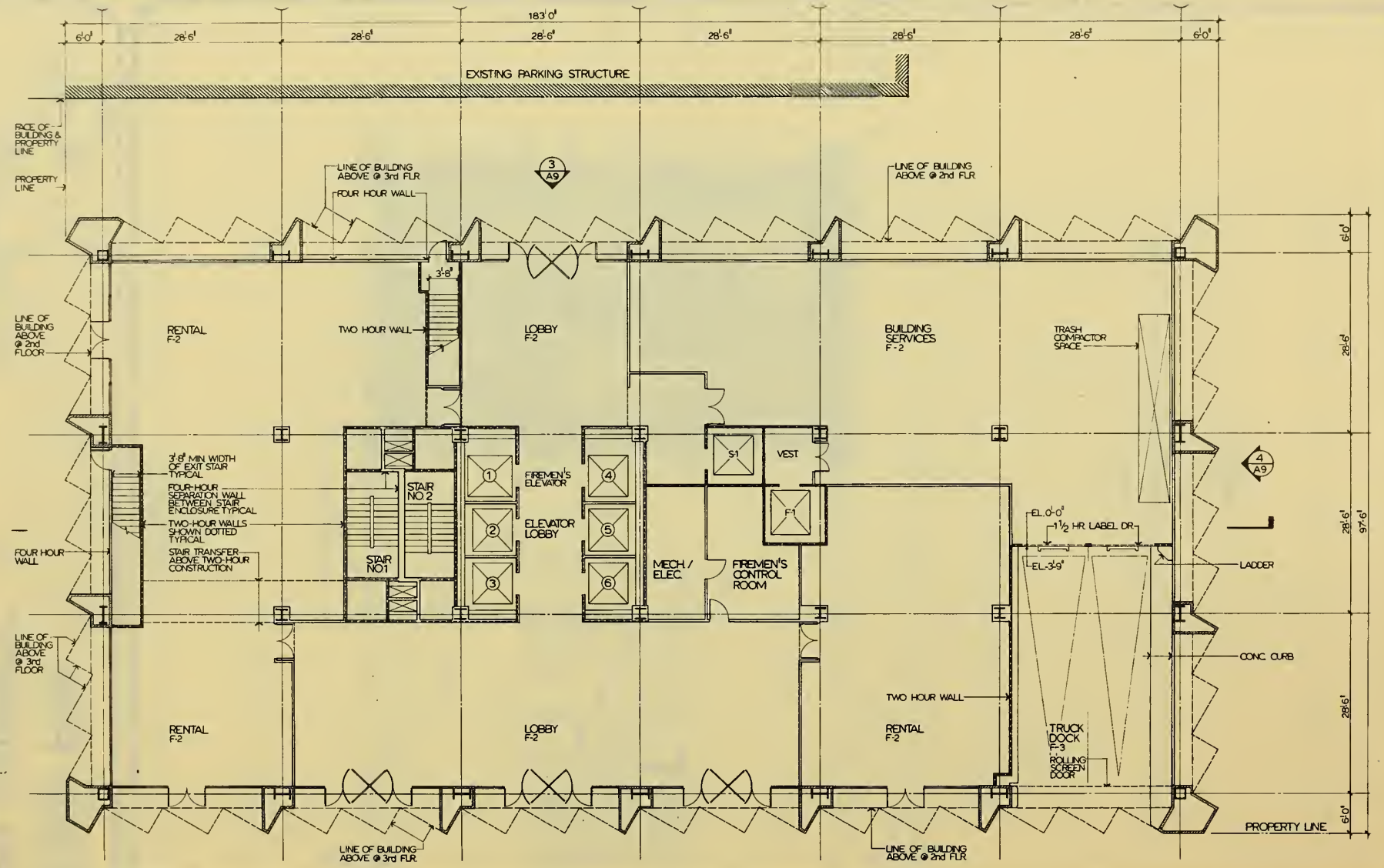
201 SPEAR

North

0 10 20 40

Scale Feet

Figure No. 6



North

0 10 20 40

Scale Feet

Ground Floor Plan

Figure No. 5

Source: Primiani-Weaver, Architects

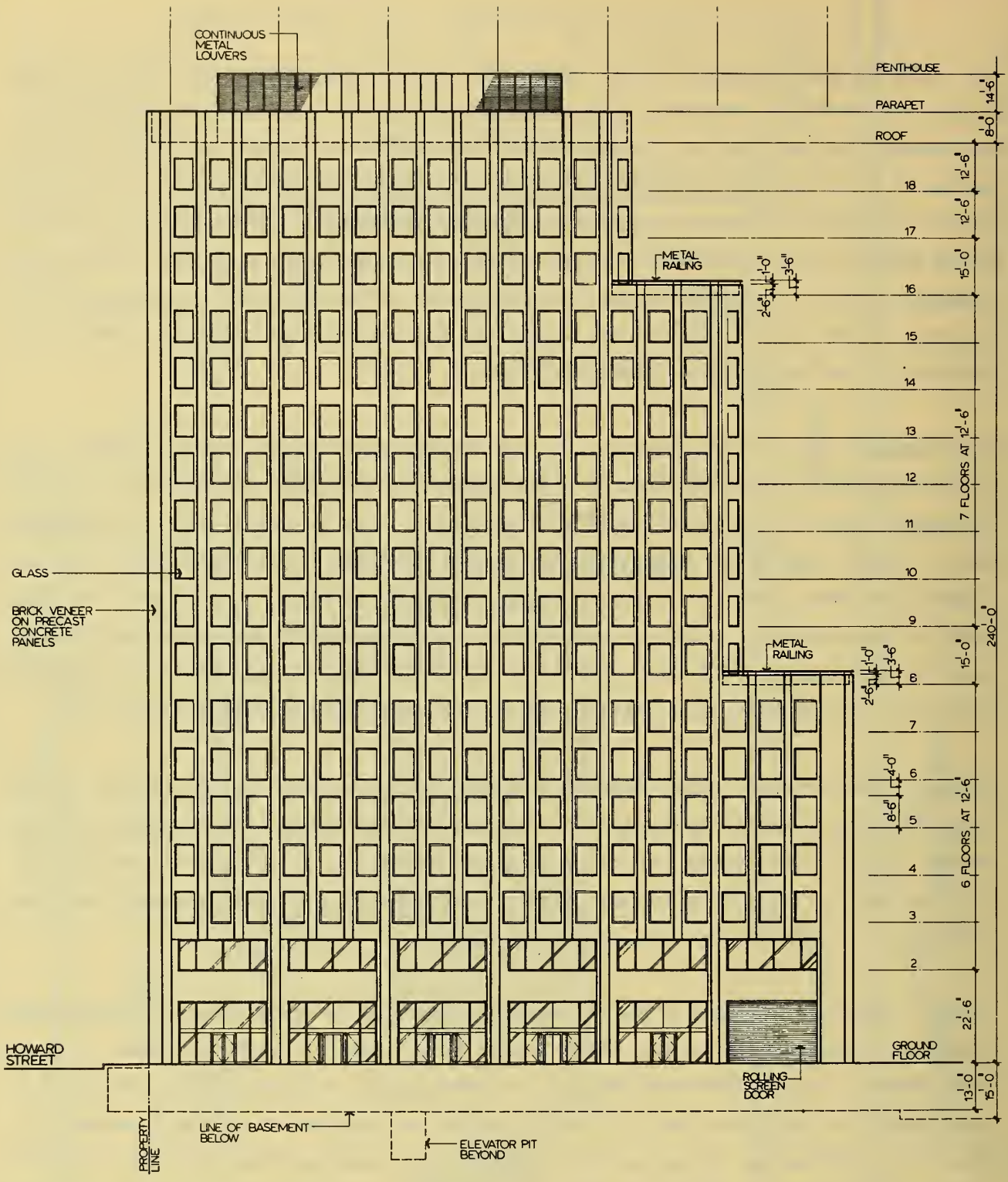
201 SPEAR

The building's main pedestrian entry would face Spear Street and would contain a lobby leading to a bank of 6 elevators. A second pedestrian access would be provided through a landscaped plaza and lobby on the east side of the building. A landscaped plaza would be located at the street level adjacent to the south side of the proposed building to maximize solar accessibility. Paving on the exterior walkways and plaza would be of brick or paving blocks designed to be compatible with the building exterior (Figure 4, page 9). The unused triangular portion of the site between the Embarcadero Freeway and the existing parking structure would remain vacant and paved, pending eventual determination of future decisions on the Embarcadero Freeway removal.

The proposed project would feature a 3-level stepped-back building design. The first 7 floors would have an average area of 16,800 square feet and rise to a height of 102 feet. The second level, encompassing floors 8-15, would step back to a floor area of 14,074 and rise to the 204 foot height level; with the third level, floors 16-18, having floor areas of 11,409 square feet would rise to the roof height of 240 feet (Figure 8, page 14). The roof would be surrounded by an 8-foot parapet shielding a mechanical penthouse which would rise 22.5 feet over the roof level. The roofs of floors 8 and 16 would feature landscaped terraces on the building's south side maximizing solar accessibility (Figure 8, page 14).

Design of the structure would feature a sculptured brick-faced facade similar to the Folger Building opposite the site on the west side of Spear Street. Dark bronze anodized window frames with bronze tinted glass, would be set at a 30° angle providing the structure with an articulated facade. The horizontal detailing (Figure 3, page 8) would be achieved with a pattern variation in the brick facing.

Vehicular and freight access to the site would be restricted to Spear Street. Fifty parking spaces would be provided in the 32,000 square foot basement, with an access ramp to Spear Street. Freight deliveries would be received at the enclosed loading dock (with 2 truck bays) on the ground level. Freight would be transferred to the basement for subsequent distribution throughout the building. One elevator (the Fireman's elevator) would have access to all floors and the basement, and would be used for freight distribution.



Note: Brick Patterning Details not Shown

Spear Street Elevation

North

0 20 40 80

Scale Feet

Source: Primiani-Weaver, Architects

201 SPEAR

Figure No. 8

The project would feature office space on floors 2-18 with nearly 5,000 square feet of rental space on the ground floor level. The rental space would be for office serving commercial uses if tenants can be found, otherwise it would be leased as office space. Construction would be expected to take place over an 18-month period, subsequent to project approvals. Architects for the project are Primiani-Weaver of San Francisco.

For illustrative purposes, the project is shown in a context model against a backdrop of existing and proposed buildings in the immediate vicinity (Figure 9, page 16).

D. REQUIRED APPROVALS

The proposed project would be subject to Discretionary Review by the City Planning Commission.[1] Evaluation criteria under this process includes the protection and enhancement of the pedestrian environment; preservation of architecturally and historically significant buildings; preservation of housing; avoidance of industrial displacement; adequate and appropriate means of transportation to and from the project site; energy conservation; physical relationship of the proposed building to its environs; and effects on views from public areas and on the City skyline. The 201 Spear Office Building has a diagonal dimension of 205.5 feet and exceeds the height and bulk district requirements for bulk by 5.5 feet. In addition, the 22.5-foot high mechanical penthouse ins 6.5 feet higher than is permitted under Section 260 (b) 1.(B) and the 8-foot high parapet is 4 feet higher than permitted under Section 260 (b) 2.(A) of the Code. The project would require Conditional Use Authorization for the Planned Unit Development under the provisions of Section 303 and 304 of the City Planning Code. Pursuant to Section 303 of the Code, a development must meet certain criteria before a Conditional Use Permit may be granted. These criteria include requirements that development must be compatible with the neighborhood and not detrimental to the health, safety and welfare of people living or working in the area or injurious to the property in the vicinity. Specific criteria for the PUD include conditional use criteria, plus requirements that the site be at least one-half acre, that the project promotes the Master Plan Objectives and Policies, that it provide adequate off-street parking and useable open space and that no height limit exceptions other than minor deviations be allowed. The Conditional Use Application for the Planned Unit Development would be the subject of the public hearing before the City Planning Commission after certification of the Final EIR.

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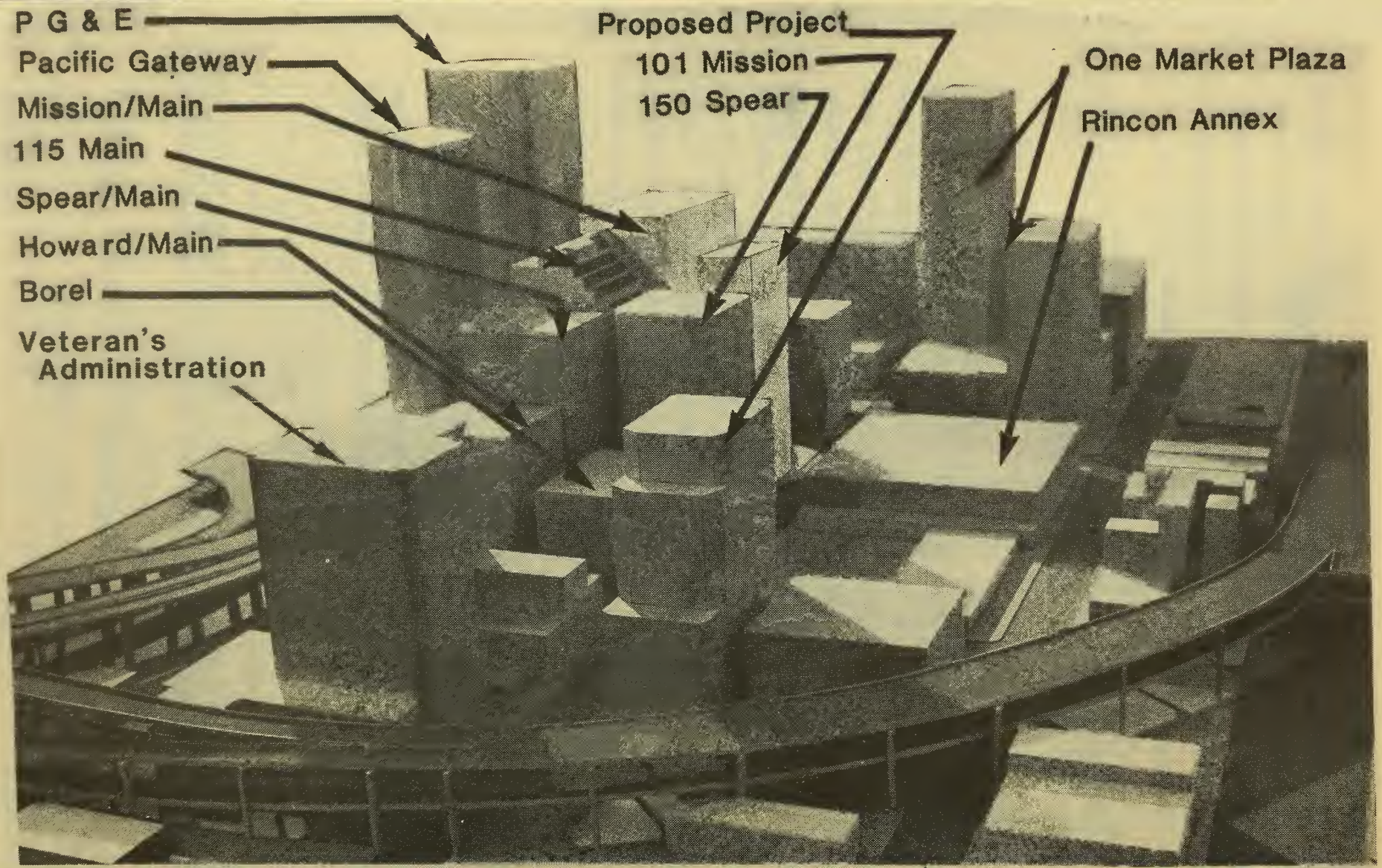
[1] San Francisco City Planning Commission, Resolution 8474, adopted 17 January 1980, applicable to all proposals in the C-3 district.



North

Context Model

Source: Primiani-Weaver, Architects

Figure No. 9 201 SPEAR

III. ENVIRONMENTAL SETTING

A. LAND USE

The project site is located on the eastern periphery of the downtown business district in an area designated by the City Planning Code as a support and expansion area for offices in that district. Adjacent land use to the north and west is comprised of government and commercial office buildings. The Embarcadero Freeway curves around the site to the east and south, forming a physical and visual barrier with adjoining land use activites (Figure 10, page 18).

The project site is currently vacant, covered with asphalt paving, and used for 150 parking spaces (Figure 11, page 19). The project area, once characterized by printing, wholesaling companies, ship chandleries, office supply and parking uses, is now changing to an office-administrative land use. An 8-level parking structure is located on the lot immediately to the east on the Howard Street frontage. The block immediately north is occupied by the United States Postal Service - Rincon Annex. To the west, on the opposite side of Spear Street, the 5-story Folger Coffee Company building, and a 16-story high rise office comprise the block. The block to the northwest, diagonally across from the project site, has 5 18- to 27-story office buildings either under construction or proposed for development including 150 Spear (EE 78.413), 101 Mission Street (EE 79.236) office building, 135 Main Street (EE 81.61), the proposed Spear and Main building (EE 80.349), and the Mission/Main Building (81.183E). The 8-story Borel Building (developed) is located at the northwest corner of Spear and Howard Streets. Ground floor retail is located or proposed to be located in all the proposed or newly constructed office buildings mentioned above, except for 150 Spear Street.

The project site is zoned C-3-S: Downtown Support (see Figure 12, page 20). Professional and business offices, retail, clubs and institutions, hotel/motels are principal permitted uses in this district.[1] Housing requires a conditional use. At this site, 1 unit per 125 square feet of lot area or 302 housing units would be allowed. The applicable height and bulk district for the site is 240-G, which permits buildings up to 240 feet high, with

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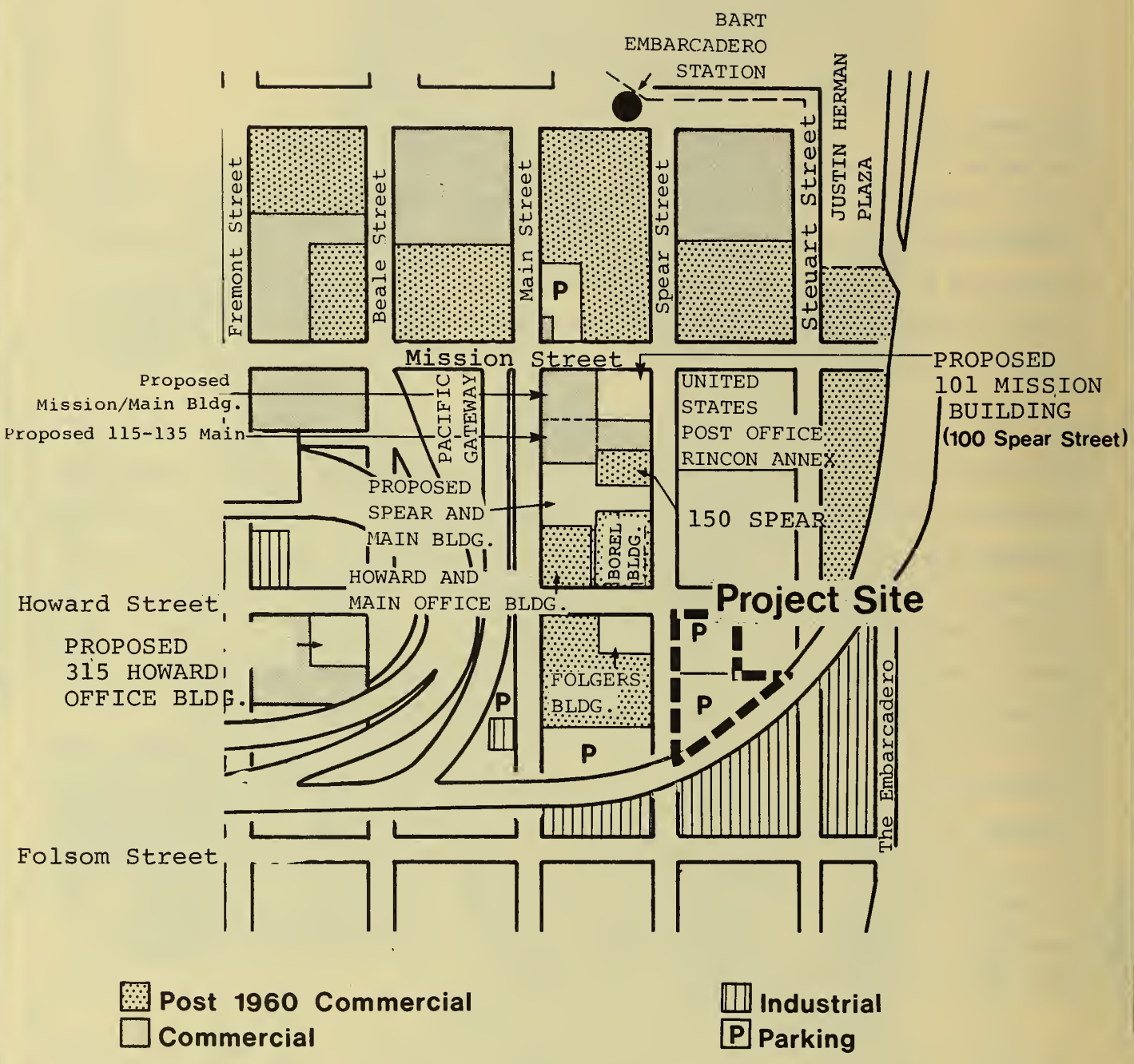
[1] City and County of San Francisco Planning Code, Sections 215-221.



Land Use Map

North
Not to Scale

Source: Field observations by EIP Corp

201 SPEAR

Figure No. 10

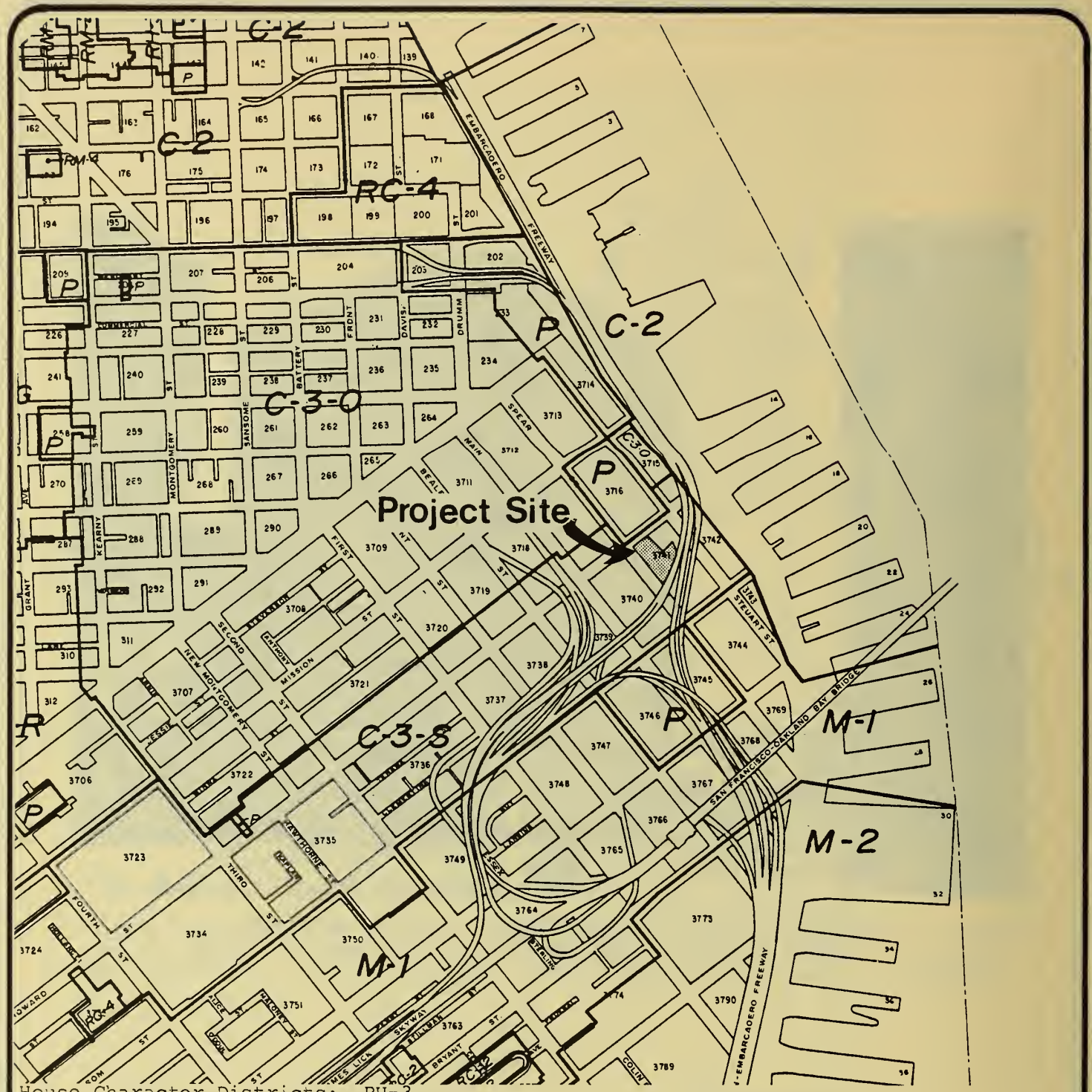
View to southwest across project site. Folger Building and two adjacent highrise structures appear in background across Spear Street.

Project Area Photograph

Source: E.I.P. Corp.

201 SPEAR

Figure No. 11



House Character Districts; RH-3
Mixed House & Apartment Character Districts; RM-1, RM-2, RM-3, RM-4
Residential-Commercial Combined Districts; RC-2, RC-3, RC-4,
Commercial Districts; C-2, C-3-O, C-3-R, C-3-G, C-3-S, C-M
Industrial Districts; M-1, M-2
Public District; P

Zoning Map

North

0 400 800 1600

Scale Feet

Source: City and County of San Francisco, Zoning Maps

201 SPEAR

Figure No. 12

maximum dimensions of 170 feet in length and 200 feet on the diagonal, as measured above 80 feet from the ground. The Planning Code, in describing the C-3-S commercial district specifies that ". . . Motor vehicle access from freeway ramps to this district is good, and truck and automobile traffic is heavy; at the same time, the district is within walking distance of rapid transit on Market Street. In its eastern portion, the district also serves in part as an expansion area for offices, at a lesser intensity than in the Downtown Office district. The district has for the most part been underdeveloped in the past, and opportunties exist for major developments of new uses covering substantial areas."[1]

B. VISUAL QUALITY AND URBAN DESIGN

The proposed site is in an area of South of Market that is undergoing change due to recent and current construction. Although the project area was characterized by pre-1930, 2- to 3-story commercial/office buildings, most of the older structures are being removed to make way for taller buildings such as the proposed project. Vegetation is limited to some street trees and the landscaped plazas associated with the mid- and high-rise buildings.

The project site is currently a flat asphalt lot used for open-air parking (Figure 11, page 19). Adjacent structures vary in age and appearance. The 5-story Folger Coffee Company building (Figure 13, page 22) across Spear Street from the project was renovated during the 1970s and is currently used as office space. Retention and adaptive use of this brick building, and the recognition of its design elements and building materials by the design and construction of the 8-story Borel building north of the intersection, reflects the area's past architectural styles (Figure 13, page 22). However, the more recently constructed adjacent high rise structures do not account for the significance of these efforts to maintain ties to the past.

Building colors range from red in the use of brick to the light tan, grey and pink of concrete and granite-faced panels on the exterior of buildings constructed since 1970. The dark grey glass and unadorned facades of some of the newer high rise structures, notably the 18-story Veterans Administration building at Howard and Main Streets, contrast with the brick ornamentation, arched windows and entries, and pedestrian-level interest of the adjacent Folger Coffee Company building.

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[1] City and County of San Francisco Planning Code, Sections 210.3.

Spear St

The Borel Building

Howard St

Folger Coffee Company Building

Project Area Photographs

Source: E.I.P. Corp.

201 SPEAR

Figure No. 13

At ground level near the project site, most of the views are characteristic of an urban environment; the presence of built structures holds views in close, focusing attention along the lower levels of these structures. Views to the north are of the Financial District north of Market Street. The skyline consists of a variety of heights and structures, with a variety of materials and colors. Views of the south and east are terminated abruptly by freeways and approaches to the Bay Bridge (Figure 14, page 24). Should the Embarcadero Freeway be removed, street level views would be opened to the Bay and Treasure Island. From levels above the height of these elevated freeways, views to the south and east look out over the Bay to Treasure Island and the East and South Bay.

C. EMPLOYMENT, HOUSING AND FISCAL FACTORS

1. Employment

At present the proposed project site is vacant and used as a surface parking lot. Parking is on a self-park basis with part-time attendants.

The site is located in the downtown office area of San Francisco. Bay Area office employment now represents just over one-half of the region's total work force. Since 1970, office employment has accounted for 60% of Bay Area and San Francisco employment growth.[1]

Consistently low vacancy rates and rapidly rising rents in the downtown area suggest that demand for space is strong and that construction of new office space in San Francisco has failed to keep pace with growing demand. Demand for office space could continue in the next several years and office employment could be expected to grow.

2. Housing

There are slightly over 2 million housing units in the 9-county Bay Region according to the 1980 Census. About 15% of the single-family dwellings, the most prevalent type of housing, are in San Francisco.[2] There has been, however, a strong increase in the

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[1] Association of Bay Area Governments and Bay Area Council, San Francisco Bay Area Economic Profile, December 1979, pp. 37-48.

[2] U.S. Department of Commerce, Bureau of Census, 1980 Census of Population and Housing (Advanced Reports: California (PHC80-V-6), Final Counts, March 1981.

Project site currently being used as a parking lot. Parking structure and elevated freeway to south block views to the Bay.

View to north. Highrise structures along Market Street appear in background.

Project Area Photographs

Source: E.I.P. Corp.

201 SPEAR

Figure No. 14

percentage of multi-family housing units (including townhouses, condominiums and apartments), as shown in Table 1.

TABLE 1

BUILDING PERMITS IN SAN FRANCISCO, 1978-1981

	1978	1979	1980	1981
Single Family	227	239	190	59
Multiple Family	818	1,594	1,012	1,003
%Single Family	21.7%	13.0	15.8	5.5

Source: Jim Davis, Real Estate Research Council, telephone conversation, 20 November 1981.

The average market value of a single-family house in the Bay Area was $140,000. In San Francisco the average was $148,000 which was the greatest increase of all Bay Area cities over the past 5 years.[1] The City had about 322,300 housing units as of the end of 1980. About two-thirds of the stock is rented and one-third is owner-occupied. Rents averaged in the $350-$650 range with few units available for under $200-$300 per month.[2] The vacancy rate is estimated at about 3% for the total available housing stock.[3]

Although the number of housing units increased 1.9% and households increased 1.3% from 1970 to 1980, the City's population decreased 5.2% over that period and the number of persons per housing unit declined 6% (from 2.34 to 2.19).[4] The percentage of San Francisco's employed population that works in the City has increased.[5] San Francisco residents working outside the City have either moved closer to where they work, or they

[1]Real Estate Research Council of Northern California, Northern California Real Estate Report, Vol. 33, No. 1, April 1981. The Federal Home Loan Organization reports an average of $127,000 for purchase housing (new or used, single or multi-family) in the third quarter of 1981. San Francisco Examiner, 15 November 1981.

[2]San Francisco Department of City Planning, Residence: Changes in the San Francisco Housing Inventory, 1978, September 1979. Figures for 1979 and 1980 are from Department of City Planning records, Joan Carson, telephone conversation 9 July 1981.

[3]San Francisco Department of City Planning, Final EIR, 101 Montgomery, EE 80.26, certified 7 May 1981, page 38.

[4]Department of City Planning, Statistical Update on Citywide Office Development, 1 May 1981.

[5]U.S. Census Bureau, Selected Characteristics of Travel in the San Francisco - Oakland SMSA Series, page 23, No. 88, July 1979.

have found jobs in the City. If residents move out of the City, they are likely to be replaced by someone who works in the City (since most employed residents work in the City), thereby increasing the percentage of employed San Franciscans who work in the City.[1]

3. Employment/Housing Affordability

Table 2, page 27, provides an estimate of the typical income ranges for workers in San Francisco's downtown highrise office buildings. The majority of clerical workers fall into the income categories of $27,000 or lower, and most of the managers, proprietors, and professional and technical workers are in the income categories of $27,000 annually or higher.

Table 3, page 28, provides an indication of the range of prices for different types of housing in the City in 1981 for both rental and purchase units on a monthly basis.

These tables assume that housing in San Francisco is generally purchased by households rather than individuals, reflecting a national trend based on high down payments and interest rates (one-person households, however, still exist in the City). Table 3, page 28, provides an estimate of the percentages of the expected employee population in new highrise office buildings that could afford a given housing type. This table assumes that for home purchases, the households would make a 20% down payment, and pay a 15% interest rate on a 30-year mortgage term.

4. Fiscal

The proposed project site contains 5 parcels (lots 16, 17, 26 and portions of lots 1 and 19) in Assessor's Block 3741. The assessed value (beginning 1981-82 all assessed values are full market values) of the site for the fiscal year 1981-82 was $1,971,000. At the 1981-82 tax rate of $1.19 times 1% of assessed value, the site would generate about $23,500 in property tax revenues.[2] This would be distributed to: the City and County of San Francisco (79.3%, about $18,600); the San Francisco Unified School and Community College Districts (14%, about $3,300); BART (6.3%, about $1,480, mostly for bond payments); and the Bay Area Air Pollution Control District (0.4%, about $94).

Other revenues that are generated to the City from the site are parking tax revenues. In the fiscal year 1981-82, the project site would generate about $15,000 in parking tax to the City.

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[1] Linda Hausrath, Recht Hausrath and Associates, telephone conversation, 11 September 1981.

[2] Of the total tax, $19,700 represents the maximum allowable under Proposition 13 per general government expenditures, and $3,800 was levied to finance bond obligations previously approved by the general electorate ($1.19 times 1% assessed valuation).

TABLE 2
HOUSING PRICES IN SAN FRANCISCO, 1981

Rentals: Median Monthly Rent[1]	
Studio Apartment	$ 440
1-Bedroom	500
2-Bedroom	560
3+ Bedrooms	590
1980 Census Median Monthly Rent (median number of rooms is 4.0)[2]	310
Purchase: Average Sales Price	
New Single Family[3]	$ 155,500
Existing Single Family[4]	148,000
Condominium (New and Existing)[5]	112,760
Medium value of owner occupied dwelling (median number of rooms of rooms is 4.0)[6]	119,900

[1]Mike Estrada, Department of City Planning, telephone conversation, 17 December 1981. Result of 1981 survey of rental advertisements in the San Francisco Examiner. Newspapers are not statistically valid sources because they are not representative of entire stocks of units, they can, however, provide a general indication of rents.

Two other sources of rental data exist but have been deemed inadequate for the present study: 1) HUD develops rental costs for the Section 8 housing subsidy program. These estimates reflect SMSA data which have been indexed forward from the 1970 census, and benchmarked with the Annual Housing Survey, which is published with at least a year time-lag; 2) the Citizens' Housing Task Force has developed hypothetical rental levels based on multi-family construction cost. However, new units represent a very small segment of the San Francisco rental market.

[2]Based on preliminary date from the 1980 census (100% sample) of $266 in April 1980. Selected Housing Characteristics by States and Counties: 1980, Bureau of Census 1981. The median rent was indexed to 1982 based on the Consumer Price Index of 15.4%.

[3]New single family housing price given in: Department of City Planning Housing Element, Background Data and Need Analysis, revised September 1981, page 3, were indexed from October 1979 to October 1981 according to: Real Estate Research Council of Northern California, Real Estate Report, vol. 33, no. 1, page 8; 1981 index given by James H. Davis, Executive Director, telephone conversation, 17 December 1981.

[4]Real Estate Research Council of Northern California, op. cit., page 4.

[5]Based on average loan amount over the first 3 quarters of 1981, as reported in: California Department of Savings and Loan, "Loan Summary Analysis," line 26. Assumes a 20% down payment.

[6]Based on 1980 Census of $103,900 for median owner-occupied housing price indexed to $119,000 for 1982 based on the Consumer Price Index of 15.4%.

TABLE 3

PERCENT OF OFFICE WORKER HOUSEHOLDS ABLE TO AFFORD VARIOUS MONTHLY HOUSING COSTS, 1981[1]

Housing Type	Median Monthly Cost	% Able to[2] Afford Cost
(Rental)		
Studio Apartment	$ 440	75-77
One Bedroom	500	71-73
Two Bedroom	560	67-69
Three or More Bedrooms	590	66-68
1980 Census median monthly/rent	310	100
(Purchase)		
New Single Family	$ 1,570	14-16
Existing Single Family	1,500	13-14
Condominium	1,140	22-24
1980 Census owner-occupied dwelling	1,215	20-22

[1]Housing costs derived from Table 2; rental costs as given, monthly housing expenditure for purchase assumes 20% down payment; 15% mortgage interest, 30-year mortgage.

[2]Interpolated from Table 4, page 29.

Note: The above table assumes that all employees are part of households and does not reflect availability of housing, just the affordability.

TABLE 4

Income Ranges for Office Workers

in Downtown High-Rises 1981

Occupational Distribution	Individual Income Distribution (salaries and wages)[1] Under 14,240	14,240 17,799	17,800 26,699	26,700 35,599	35,600 44,499	44,500 88,999	89,000+	
Professional and Technical	6%	11%	34%	51%	50%	37%	42%	
Managers and Proprietors	1	4	14	23	40	49	50	
Clerical	92	81	44	14	4	4	1	
Sales	1	2	5	10	5	7	4	
Others	-	2	3	2	1	3	3	
TOTAL	100%	100%	100%	100%	100%	100%	100%	
% of Individuals in Range[2]	18.6%	16.5%	22.4%	19.1%	10.4%	10.7%	2.4%	TOTAL 100%
% of Households in Range	15.1%	8.9%	15.2%	20.3%	16.8%	20.3%	3.3%	TOTAL 100%

Source: EIP; San Francisco Planning and Urban Renewal Association, Impact of Intensive High-Rise Office Development-Detailed Findings, Table 21, page 117 (1975).

[1]The income data are based on raw data from a survey of 1,022 office workers in San Francisco high rise buildings conducted in April 1974 for the SPUR Study. The 1981 income ranges were developed by inflating the 1974 ranges by 78%. This represents the mid-point of the range of increases for office related occupations as given in US Department of Labor, Area Wage Survey: San Francisco-Oakland SMSA, Washington, D.C., March 1981, page 12.

[2]The survey asked each respondent to indicate his/her income as well as household income.

Since the proposed site is vacant, City costs to the project area are minimal. Police, fire and general government expenditures are supported primarily by the General Fund. Most street maintenance, street improvement and traffic control costs are supported by other revenue sources such as fines, and federal and state aid.

D. TRANSPORTATION, CIRCULATION AND PARKING

1. Street System

As shown in Figure 15, page 31, the project site generally has freeway access to/from the East Bay and Peninsula. The most direct freeway access is at the on- and off-ramps at the Mission/Main and Mission/Beale intersections and along Beale and Fremont Streets. These ramps provide travel links to/from the Peninsula and East Bay. Peninsula access includes the I-280 off ramp on Fourth Street. Automobile accessibility to/from the North Bay is less direct and therefore subject to a more dispersed travel pattern. The most probable routes for North Bay travel are via The Embarcadero (to Broadway, Bay, etc.) or via Interstate 80 (westbound) or surface streets to the U.S. Highway 101 corridor (Van Ness, Franklin, etc.).

The local street network (Figure 15) is characterized by the major east/west routes of Market, Mission, Howard and Folsom Streets and the major north/south access routes of Fremont, Beale and Main Streets and The Embarcadero. The Transportation Element of the San Francisco Comprehensive Plan designates Market, Howard, Folsom, Beale, Main and Steuart Streets and The Embarcadero as Major Thoroughfares.[1]

The Transportation Element also designates Market, Mission, Fremont and First Streets as "Transit Preferential Streets." By definition, priority is given to transit vehicles over automobiles on these streets. As outlined in the Northeastern Waterfront Plan, Steuart Street would be designated as an exclusive transit street (closed to auto traffic from Mission south to The Embarcadero).[2]

2. Transit

Transit routes in the vicinity of the project site are shown in Figure 16, page 32. Local service is provided by the San Francisco Municipal Railway (MUNI) (Table 5, page 33) and

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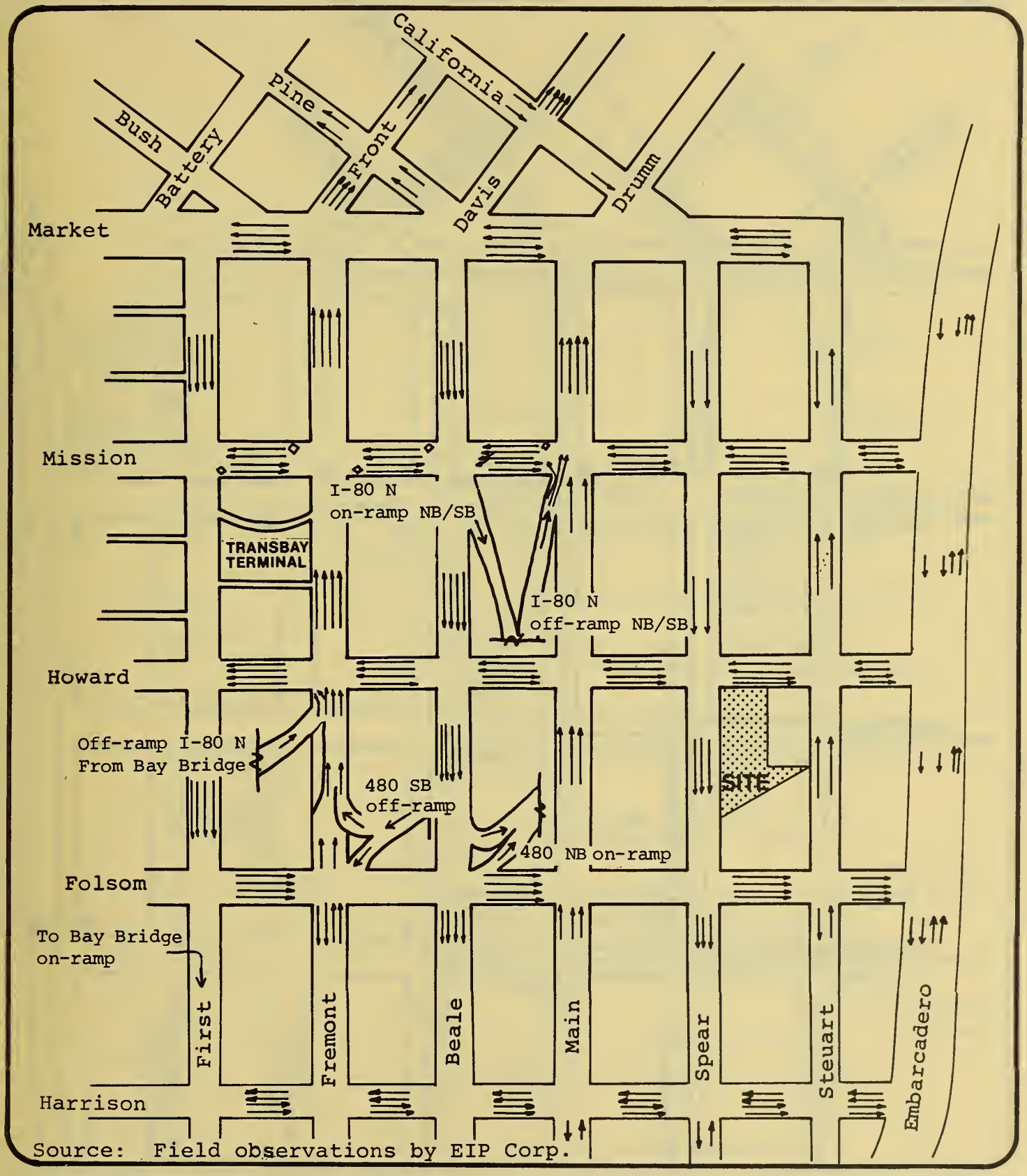
[1] Major Thoroughfare is defined as a cross-town street whose primary function is to link districts within the City and to distribute traffic from and to the freeways; a route generally of city-wide significance, as defined in the Thoroughfare Plan of the Transportation Element of the San Francisco Comprehensive Plan.

[2] San Francisco Department of City Planning, Northeastern Waterfront Plan, January 1977 (amended 31/1/80, 29/5/80 and 4/12/80), pages 42 and 55.



Street Network

Legend:

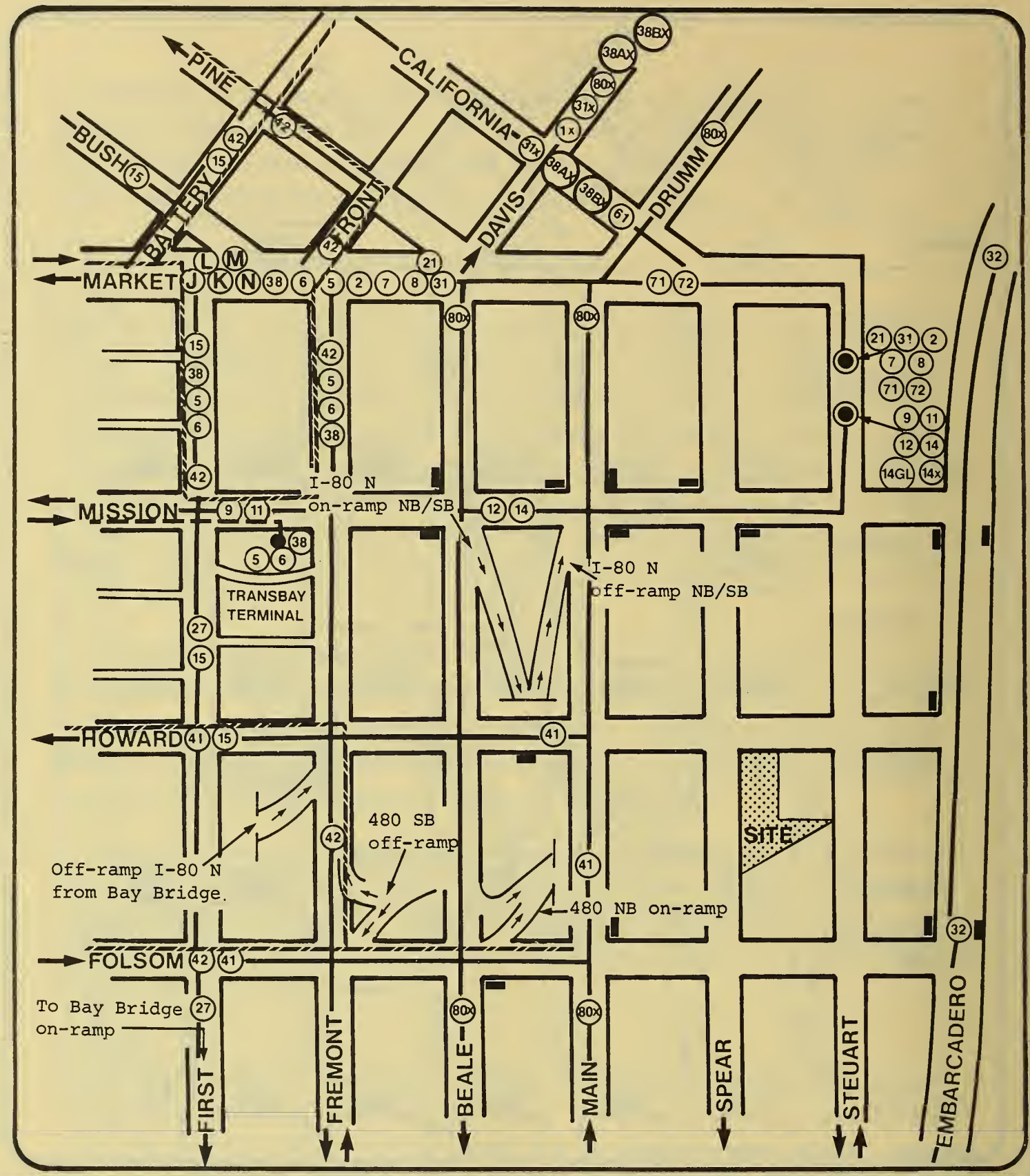
◇ Diamond Lane: Buses and Right Turns Only, 7am to 6pm
NB = Northbound
SB = Southbound
→ = Traffic Lane

Note: Turning movements shown in Appendix B, pages A-35 thru A-38

North

Not To Scale

Figure No. 15



Transit Routes

North
Not to Scale

- (15) MUNI Routes
- MUNI Bus Stops (within 800' of Project Site)
- SamTrans Routes
- Golden Gate Routes

Source: EIP Corporation

Figure No. 16

TABLE 5

MUNI SERVICE SUMMARY

ROUTE DESIGNATION	
1X - California Express	Links downtown with Richmond District, weekday peak hour only
2 - Clement	Links downtown with Western Addition and Richmond District
5 - Fulton	Links downtown (and Transbay Terminal) with Richmond District
6 - Parnassus	Links downtown (and Transbay Terminal) with Sunset District
7 - Haight	Links downtown with Haight-Ashbury District, weekdays only
8 - Market	Links downtown with Castro/Market area
9 - Richland	Weekday service linking downtown with Mission and Bernal Heights, weekdays only
11 - Hoffman	Links downtown with upper Market area
12 - Ocean	Links downtown with outer Mission and City College areas
14 - Mission	Links downtown with Mission, outer Mission, and Daly City
14GL & 14X - Mission	Express and limited-stop service linking downtown with outer Mission and Daly City
15 - Third	Links Fisherman's Wharf, downtown, Bayview and City College
21 - Hayes	Links downtown with Richmond District
27 - Noe	Links downtown with Mission and upper Noe Valley
31 - Balboa	Links downtown with Richmond District
32 - Embarcadero	Daytime service linking downtown and South of Market with Aquatic Park, daytime only

Table 5
(continued)

38- Geary	Links downtown with Western Addition and Richmond District
38L, 38AX, & 38BX - Geary	Express and limited-stop service linking downtown with Richmond District
41 - Union	Links Mission with downtown, Chinatown, North Beach and Union Street.
42 - Downtown Loop	Shuttle service linking downtown with Civic Center, SP Depot and North Beach
61	California Cable Car
71 - Haight-Noriega	Links downtown with Haight and Sunset Districts, weekday peak periods only
72 - Haight-Sunset	Links downtown with Haight and Sunset Districts, and Stonestown weekday business hours only
80X - Gateway Express	Links Gateway Center with downtown and SP Depot
J,K,L,M and N MUNI METRO	Light-rail service linking downtown with upper Noe, Sunset, Parkside and Ingleside Districts

[1] Susan Chelone, Planner, MUNI, telephone conversation, 17 September 1981.

regional service is available via BART, AC Transit (AC), Golden Gate Transit (GGT), San Mateo County Transit (SamTrans), Greyhound, and Southern Pacific (SP).

3. Parking

The project site is included within the Parking Belt as outlined in the Transportation Element of the San Francisco Comprehensive Plan. The purpose of the Parking Belt is to provide "areas appropriate for short-term parking facilities . . . located and designed to intercept vehicles entering downtown from major thoroughfares..."

A parking occupancy review[1] has been compiled for the project area (bounded by Market, Townsend, Main and Fourth Streets and The Embarcadero). Within this area, 4,530 public spaces are available in 34 off-street parking facilities (see Apendix B, page A-33). The average occupancy (during the midday) for the various facilities is approximately 92%. Within the project block, a total of 690 public spaces are available - these spaces were about 85% occupied (580 vehicles) during the parking survey.

4. Bicycle Access

In the vicinity of the project site, the City's Master Plan has designated Market and Spear Streets as bicycle routes.

E. NOISE

To quantify the noise environment on the project site, noise measurements were made on 17 March 1981. The measurements were made at the 3 locations shown in Figure 17, page 37. Site 1 is on top of the existing parking garage about 30 feet above The Embarcadero Freeway and about 100 feet from the center of the freeway. This measurement location is representative of the noise exposure of the upper floors of the proposed office building. Site 2 is at ground level at the location of the nearest facade of the proposed building to the freeway. This measurement location represents the freeway noise exposure of the lower floors of the proposed building. Site 3 is located near the intersection of Spear and Howard Streets 25 feet from the edge of Spear Street and 25 feet from the edge of Howard Street. This measurement location is representative of the noise exposure of the building facades facing Spear and Howard Streets. The data obtained during the measurements are summarized in Table 6, page 37.

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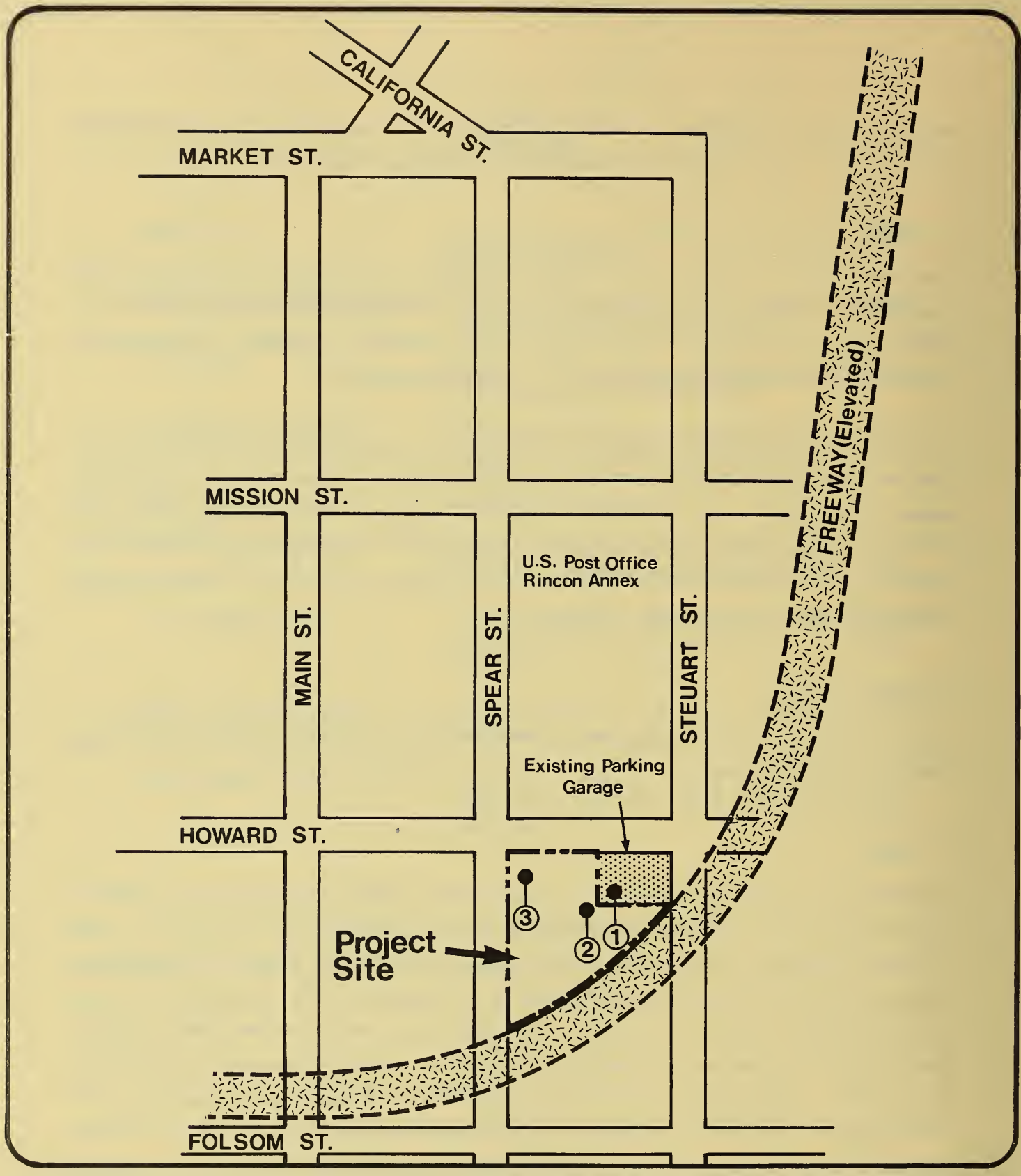
[1] Field observations conducted by EIP on January 21, 1982.



Noise Measurement Locations

North
Not to Scale

Source: Charles M. Salter, Inc.

201 SPEAR

Figure No. 17

Table 6: Results of On-Site Noise Measurements

Site No.	Location	Day and Time of Measurement	L_{10}*	L_{50}	L_{90}	L_{eq}**	Comments
1	Top deck of parking garage about 30 feet above the Embarcadero Fwy and approximately 100 feet from the center of the freeway	17 March 1981 3:25-3:40 pm	75	73	71	73	Trucks, buses and autos on the freeway are the major noise sources. Maximum noise levels to 80 dBA
2	At location of proposed building facade facing the freeway, at ground level	17 March 1981 4:06-4:21 pm	68	65	63	66	Noise from the elevated freeway is dominant
3	25 feet from the edge of Spear St. and 25 feet from the edge of Howard St., at ground level	17 March 1981 3:48-4:03 pm	68	65	63	66	Noisiest events are occasional trucks and buses on Howard and Spear (70-80 dBA). Continuous freeway noise dominant.

*The sound level in dBA that was equaled or exceeded 10 percent of the time; L_{50} and L_{90} are the levels equaled or exceeded 50 and 90 percent of the time, respectively.
**The L_{eq} is the equivalent steady-state sound level that, in a stated period of time, would contain the same acoustic energy as the time-varying sound level during the same time period.

The major noise generator in the area is The Embarcadero Freeway. Noise levels are higher overlooking the freeway than at ground level where the freeway structure itself shields traffic noise. At ground level, the noise from the freeway and the traffic on Spear and Howard Streets is about the same.

The City of San Francisco has adopted the day/night average noise level (Ldn) to describe community noise environments. The Ldn is a single-number noise rating used to describe the average noise level over a 24-hour period (see Appendix C, page A-41, for terminology and fundamental concepts of environmental acoustics). For traffic noise environments, the Ldn is approximately equal to the peak hour Leq. Based on the data measured on-site, the noise exposure at Site 1 is an Ldn of 73 dB, while at ground level the noise exposure is an Ldn of 66 dB.

F. AIR QUALITY AND CLIMATE

1. Air Quality

San Francisco's persistent summer winds and its upwind position with respect to major pollutant sources continue to give it possibly the cleanest air in the Bay Area. Despite these advantages, there are periods, usually in fall and winter, when the air becomes stagnant. At these times the entire Bay Area has poor air quality. In 1980, only the standard for suspended particulates was exceeded in San Francisco; the other 5 measured pollutants were below the standards.[1]

Although San Francisco's air quality is better than most locations in the Bay Area, state and federal standards are not met in the Bay Area (Table 7, page 39). This has resulted in the designation of the Bay Area as a nonattainment area for ozone and carbon monoxide, and San Francisco is a nonattainment area for particulate matter. This has resulted in the development of the 1979 Bay Area Air Quality Plan, prepared by the Association of Bay Area Governments (ABAG).[2] This plan has been incorporated into the State Implementation Plan.[3] The Bay Area Plan contains a comprehensive strategy for the

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[1]Bay Area Air Quality Management District, Air Currents, Vol. 24, No. 3, March 1981.

[2]Association of Bay Area Governments, 1979 Bay Area Air Quality Plan, January 1979.

[3]California Air Resources Board, San Francisco Bay Area Basin Control Strategy, Chapter 15 of the State Implementation Plan, July 1979.

TABLE 7

NUMBER OF DAYS SELECTED POLLUTANTS EXCEEDED STATE OR FEDERAL STANDARDS, 1980[1]

Monitoring Site	Ozone[2]	Nitrogen Dioxide	Carbon Monoxide	Suspended Particulates	Sulfur Dioxide
San Francisco (Ellis Street	0.0	0	0	6	0
Redwood City	0.8	0	0	1	0
San Jose	6.2	1	15	15	0
San Rafael	0.7	0	0	1	0
Fremont	5.6	0	0	8	0
Livermore	2.2	0	-	9	0

Source: Bay Area Air Quality Management District, Air Currents, Vol. 24, No. 3, March 1981.

[1]The state standards are concentrations and durations of air pollutants that reflect the relationship between concentration and undesirable effects. They are target values, and no timetable exists for their attainment. The federal primary standards represent levels of air quality necessary for protection of public health, with a margin of safety. The provisions of the Clean Air Act, as amended, require that by 1987 the federal standards should not be exceeded more than once per year.

[2]Ozone exceedances are averaged over a 3-year period. A 3-year average of 1.0 or less is considered to comply with the federal standard.

long-term attainment and maintenance of the air quality standards. The Plan includes measures to reduce emissions from stationary sources and automobiles, and transportation controls. The air quality problems addressed in the Plan are photochemical oxidants, carbon monoxide and suspended particulates. The plan is due to be updated in 1982.

G. ENERGY

The project area is supplied with electricity and natural gas by Pacific Gas & Electric Company (PG&E). Although PG&E has indicated that facilities of sufficient size exist in the project area and that no problems should be encountered in supplying the proposed project, a final decision on which facilities would actually supply the proposed project cannot be made until receipt by PG&E of plans for the proposed project.[1]

H. GEOLOGY AND SEISMICITY

1. Geology.

The project site is essentially level at approximately 8.6 feet above sea level[2] and is surfaced with asphalt. Subsurface materials consist of loose fill underlain by Bay Mud, a thin lens of alluvium, and Franciscan Formation bedrock between -60 feet SFD and -70 feet SFD. The groundwater table is stable, approximately at sea level.[3]

Artificial fill has been dumped along the north and east tidal flats of San Francisco to provide flatland since before 1850.[4] The average thickness of fill north of China Basin is about 10 feet, but in the vicinity of the proposed project site it probably consists of 15 to 20 feet of loose soils, wood, brick and other man made rubble used to fill in the old Yerba

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[1]Courtney J. Beck, Industrial Power Engineer, Pacific Gas and Electric Company, Letter to Environmental Impact Planning Corporation, 13 August 1978.

[2]This is equivalent to Elevation 0 San Francisco Datum (SFD).

[3]Rollo, Frank L., Harding-Lawson Associates, Letter to Clifton Brinkley, Construction Manager, One Market Plaza, 3 October 1981, p. 2.

[4]Schlocker, Julius, Geology of the San Francisco North Quadrangle, California, U.S. Geological Survey Professional Paper 782, Washington, D.C., 1974, p. 88.

Buena Cove between 1852 and 1914.[1] There is no way to predict precisely the future behavior of such material except that differential settlement is inevitable when placed under load as the fill compresses and the underlying Bay Mud shifts laterally.[2]

Upper Bay Mud, a soft, compressible mixture of clay, silt and sand, underlies the fill. Maximum reported thickness of the entire Bay Mud sequence is 140 feet[3] but apparently only the upper portion of the sequence occurs at the proposed project site. This would be no more than 50 feet of material. As foundation support, the Upper Bay Mud is of low quality due to its high water content (50-60% water is common in the uppermost 60-100 feet) and high montmorillonite content (a clay mineral which swells on contact with water and forms up to 60% of the Upper Bay Mud).[4] Heavy or rapid loading of Upper Bay Mud causes excessive water pressure within these essentially impermeable materials. This quickly leads to material failure and the mud settles or shifts.[5]

At the proposed project site the Upper Bay Mud rests on "a thin lens of alluvium."[6] This is undifferentiated material transported and deposited by running water. It is often difficult to distinguish from slope debris which is transported by soil creep and landsliding. Either of these soil types may be represented by the sand which underlies the Upper Bay

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[1]Lee and Praszker, Geotechnical Input for EIR on 101 Mission Street, San Francisco, July 1980, p. 3.

[2]Lee and Praszker, "Bay Mud Developments and Related Structural Foundations," Geologic and Engineering Aspects of San Francisco Bay Fill, California Division of Mines and Geology, Special Report 97, San Francisco, May 1969, pp. 43-44.

[3]Schlocker, Julius, Geology of the San Francisco North Quadrangle, California, U.S. Geological Survey Professional Paper 782, Washington, D.C., 1974, Plate 1.

[4]Schlocker, Julius, Geology of the San Francisco North Quadrangle California, U.S. Geological Survey Professional Paper 782, Washington, D.C. 1974, Table 2 and pp. 83-84.

[5]Lee and Praszker, "Bay Mud Developments and Related Structural Foundations," Geologic and Engineering Aspects of San Francisco Bay Fill, California Division of Mines and Geology, Special Report 97, San Francisco, 1959, page 45.

[6]Rollo, Frank L., Harding-Lawson Associates Letter to Clifton Brinkley, Construction Manager, One Market Plaza, 3 october 1981, p. 2.

Mud. In any case, the sand is considered to form "scattered lenses in San Francisco Bay rather than a continuous blanket on Older Bay Clay."[1] For engineering purposes such sand pockets could be considered part of the Bay Mud sequence discussed in the preceding paragraph.

The bedrock encountered below the proposed project site is fractured shale and sandstone of the Franciscan Formation. Deposited as long ago as 140,000,000 years by turbidity currents (submarine mudflows and landslides), clay and silt in a deep sea basin consolidated into hard shale while sand-sized particles eventually formed soft sandstone interbeds. The Franciscan Formation has been broadly deformed but there is no evidence of either ancient or modern faulting below the proposed project site.[2] The rock is quite stable and strong in fresh cuts; in thoroughly sheared rock, stability is moderate.[3] A rock exposure on the east side of Hawthorne Street between Folsom and Harrison Streets is similar to the bedrock below the project site.

2. Seismicity.

There are 4 major fault zones in the San Francisco Bay Area, shown in Figure 18, page 43, which are capable of causing strong ground motion at the proposed project site. The San Andreas Fault and the Seal Cove Fault are located off the Pacific shore approximately 9 miles and 14 miles, respectively, from the project site. The Hayward and the Calaveras Faults are approximately 10 and 20 miles east of the site, respectively. Each of these systems is considered active and is capable of generating a major earthquake (greater than magnitude 6 on the Richter scale)[4] during the projected useful lifetime of a newly constructed structure (at least 50 years). A recent major earthquake in Imperial County caused $30 million damage.[5] A similar earthquake in San Francisco would have less severe effects on structures built to current seismic standards.

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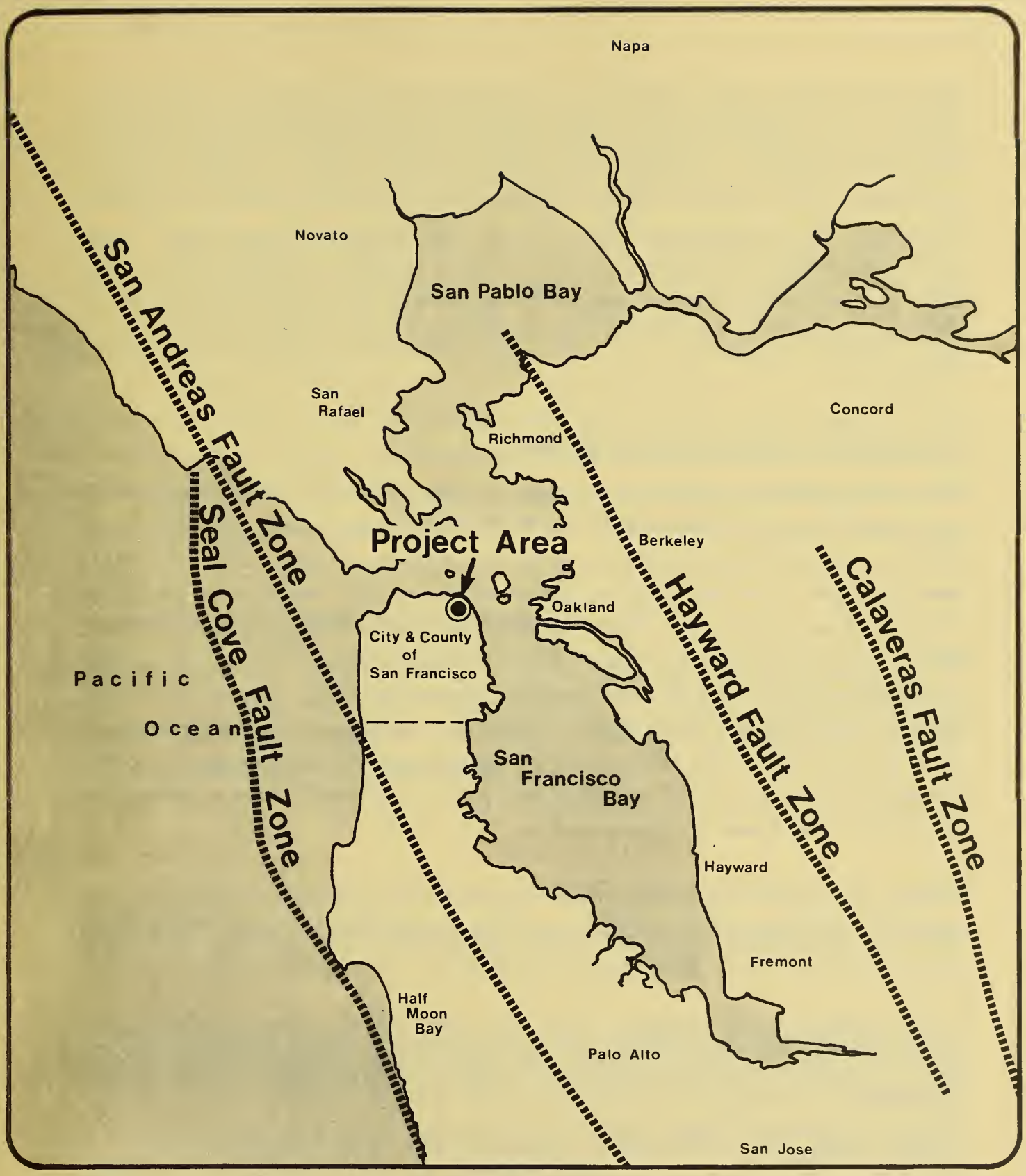
[1]Schlocker, Julius, Geology of the San Francisco North Quadrangle, California, U.S. Geological Survey Professional Paper 782, Washington, D.C., p. 84.

[2]Frank L. Rollo, Harding-Lawson Associates, telephone conversation, 17 March 1981.

[3]Schlocker, Julius, Geology of the San Francisco North Quadrangle, California, U.S. Geological Survey Professional Paper 782, Washington, D.C., 1974, Table 2 and p. 99.

[4]Richter scale: a logarithmic scale developed in 1935 by Charles Richter to measure earthquake magnitude by the energy released, as opposed to earthquake intensity as determined by effects on people, structures and earth materials.

[5]Real, C.R. et al., "Effects of Imperial Valley Earthquake," California Geology, Sacramento, CA, December 1979, pp. 259-265.



Active Fault Zones in the San Francisco Bay Area

North

0 4 8 16

Scale Miles

Source: California Division of Mines and Geology, Fault Map of California, Data Map, Series No. 1, 1975

Figure No. 18

201 SPEAR

There are no faults, active or inactive, on or near the proposed project site. Despite this, the site is in a seismically active region which annually experiences low to moderate magnitude earthquakes epicentered along the major fault lines. In 1979 a moderate earthquake (Richter magnitude 4.2) occurred along the San Andreas Fault and 2 moderate earthquakes (Richter magnitudes 4.8 and 5.9) occurred along the Calaveras Fault. Three earthquakes of Richter magnitude 5.5 to 5.9 occurred along the Calaveras Fault in 1980. Based on records of previous earthquakes, the ground shaking at the site during a seismic event the size of the 1906 San Francisco earthquake (Richter magnitude 8.3) would be "violent".[1]

I. HISTORICAL AND CULTURAL RESOURCES

According to the U.S. Coast Survey map of 1852, the project site originally lay underwater in a cove northeast of Rincon Point (Yerba Buena Cove). The shoreline at that time was located approximately at Fremont and Howard Streets. The 1905 Sanborn Insurance Maps[2] in the San Francisco Water Department show that the northern half of the project block contained the White Bros. Hardwood Lumber House (201 Spear), Hadwen Swain Mfg. Co., W.G. Strafford Coal Yard, and Shipsmith Electric Power. The project area contained several lumber yards in addition to the Sperry Flour Company and Folger Tea and Coffee House. White Bros. Hardwood Lumber House occupied the southeast corner of Spear and Howard; on the site were several wood frame warehouses. The 1911 Sanborn Maps show that these warehouses were vacant. The Sanborn Maps do not indicate the presence of basements in these buildings.

No plans or permits exist for 201 Spear.[3] However, it is known that a 2-story 4,830-square foot structure on lot 16 of the project site was demolished in 1979.[4] No building

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[1] "Violent": Fairly general collapse of brick and frame structures when not usually strong. Serious cracking of better buildings. Lateral displacement of streets, bending of rails and ground fissuring. URS/John A. Blume and Associates, San Francisco Seismic Safety Investigation, San Francisco, California, June 1974, p. 14 and Figure 3.

[2] Sanborn-Perris Map Company, San Francisco Insurance Maps 1899, New York, Vol. 2, update: 1905 and 1911.

[3] EIP survey at Central Permits -- San Francisco Department of Public Works, 14 October 1981.

[4] Paul Moreno, Senior Real Property Appraiser, Assessor's Office, interview, 14 October 1981.

permits are recorded for this structure indicating that the building may have been built prior to the 1906 earthquake and fire. Records at the Assessor's Office also reveal that lots 17 and 26 were paved parking lots sometime prior to 1966.

The Ferry Building (DCP rating of 4)[1] and Rincon Annex (DCP rating of 3), both listed with the National Register of Historic Places and City Landmarks, are about 1,000 feet north and 1 block northwest of the project site, respectively. In addition, the 2-story warehouse at 90 Folsom (DCP rating of 1) and the 5-story Folger Coffee House at 200 Spear (DCP Rating of 2) have been recognized in the Department of City Planning, 1976 Architectural Inventory. The Ferry Building, located within the study boundaries of the Foundation for San Francisco's Architectural Heritage Survey, was given a rating of A by the Foundation.[2] The South of Market area was not comprehensively included in the survey resulting in the Rincon Annex Post Office being included but not rated by the Foundation.

J. DOWNTOWN FIRE PROTECTION SERVICES[3]

In recent years, the San Francisco Fire Department has experienced reduction in personnel due to budgetary cutbacks. Daily staffing has decreased by nearly 100 persons in the last 6 years, from about 410 in 1975 to 315 at present. There are fewer companies and on the average, fewer firefighters per company.

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[1]DCP Survey refers to an architectural survey of all buildings in the City conducted by the Department of City Planning in 1976. Those buildings considered to have architectural value were rated as to the degree of architectural value from a low of "0" to a high of "5". Buildings rated 3,4 or 5 represent less than 2% of the City's entire building stock.

[2]Heritage Survey refers to a survey of downtown buildings located along Market Street and in the downtown financial and retail districts conducted by the Foundation for the San Francisco's Architectural Heritage. Buildings constructed after 1945 were not rated. An 'A' rating indicates the most important individual buildings, distinguished by outstanding qualities of architecture, historic and cultural value and relationship to environment. A 'B' rating indicates buildings which are individually important for their overall quality rather than for particular, outstanding characteristics.

[3]Information contained in this section is from Bendix Environmental Research, Inc., Environmental Consultants and Fire Protection Engineers, confirmed by Emmet D. Condon, Deputy Chief, San Francisco Fire Department, September 24, 1981.

Although it would appear that this reduction in staffing would result in more fires and an increase in multiple-alarm fires, Fire Department statistical records indicate otherwise.

While there is a greater number of emergency calls today than there were 10 years ago (39,199 in 1980 compared to 30,727 in 1970) there were 26% fewer building fires in the same period. In addition, greater alarms have been reduced by 35% in the same time period (see Tables 8 and 9, page 47).

Fire Department statistics by Fire Districts within the City are only available for 1977 to 1980 which is not a sufficient period of time within which to reliably discern trends. There is no indication in this data of any difference in trend in the downtown area compared to the rest of the City.

New highrise structures in San Francisco have been required to conform with the Life Safety provisions of the San Francisco Building Code since 1975. These buildings must be provided with automatic fire sprinklers throughout, as well as with a fire alarm system, emergency power, and special elevator controls. Although the probability of a fire occurring in a new highrise building is about the same as that for any pre-1975 building of similar size and occupancy, the chance of the fire spreading is reduced by the automatic operation of the fire sprinkler(s). In the majority of fires involving fully sprinklered buildings, a single sprinkler is adequate to control the fire because the sprinkler extinguishes flames before they spread.

The Fire Department attributes this decrease in building fires and multiple alarm fires to increased fire prevention inspections by fire suppression units, improved abatement procedures for code violations by the Fire and Building Departments, greater focus on public safety educational programs, and the continuing replacement of older, more hazardous structures with modern construction that conforms to the life safety provisions of the building code.

Approximately 450 highrise buildings in San Francisco have been affected by retroactive state highrise regulations which have resulted in upgrading of their fire safety for the occupants as well as for the firefighters who must enter the buildings under emergency conditions.

TABLE 8 SAN FRANCISCO FIRE INCIDENCE, 1970-1981

	Building fires	Multiple-Alarms	Total Alarms
1980-81	2816	90	39,199
1975-76	3793	146	34,416
1970-71	3830	139	30,727

SOURCE: San Francisco Fire Department

TABLE 9 SAN FRANCISCO FIRE INCIDENCE, 1960-1981

YEAR (FISCAL	1980-81	1979-80	1975-76	1970-71	1965-66	1960-61
TOTAL ALARMS	39,199	39,496	34,416	30,727	21,448	14,870
TOTAL BUILDING FIRES	2,816	2,898	3,793	3,830	3,476	3,364
MULTIPLE ALARM BUILDING FIRES:						
SECOND ALARMS	59	65	107	90	107	64
THIRD ALARMS	19	19	29	39	32	27
FOURTH ALARMS	7	7	6	9	7	6
FIFTH ALARMS	5	2	4	1	3	1
TOTAL MULTIPLE ALARMS	90	93	146	139	149	98
FIRE DEATHS	28	12	47	37	28	47

SOURCE: San Francisco Fire Department Annual Reports

IV. ENVIRONMENTAL IMPACTS

An environmental Initial Study on the 201 Spear Street project (see Appendix A) was prepared and published on June 12, 1981 and a determination was made that an Environmental Impact Report was required. The Initial Study identified potentially significant environmental effects which could result if the project were implemented. These issues are assessed in this chapter. In addition, certain environmental issues were determined to be insignificant and are not discussed in the EIR. They include land use compatibility, glare, relocation or displacement of housing or businesses, objectionable odors, burning of materials, utilities and certain public services, wind effects, biology and hazards.

A. LAND USE

The basic floor area ratio (FAR) permitted in the C-3-S district is 7:1 which allows any building on the site to contain a gross floor area of up to 7 times the area of the lot.[1] The proposed project would contain a total gross floor area of about 262,000 square feet which is less than the 263,977 square foot maximum allowable on the 37,711 square foot site.

The height and bulk district for the site is 240-G which allows a maximum building height of 240 feet, with a maximum building length of 170 feet and a maximum diagonal dimension of 200 feet above a height of 80 feet. The proposed building would be 240 feet in height, with a maximum building length of 183 feet on a side and with diagonal dimensions of 205.5 feet from the base of the building to 102 feet in height, a diagonal measurement on the second level of 177 feet to a height of 204 feet and a diagonal measurement on the third level of 152.8 feet to the top of the building. The building exceeds bulk limitations and therefore requires conditional use approval.

The proposed project would replace the existing surface parking lot on the site with an office building of about 262,000 gross square feet at a FAR of approximately 7:1. Although tenants are unknown at this time, an occupancy of about 1,048 predominantly white-collar workers would be expected. (See Chapter IV. C. Employment, Housing, and Fiscal Factors, page 53.)

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[1] City and County of San Francisco Planning Code, Section 124.

The project may cumulatively contribute to further development within the vicinity of the site. For example, other secondary impacts such as the development of retail, commercial and service-related establishments including restaurants may occur as a result of the market generated by additional employment in the area (see Chapter IV.K. Growth Inducement, page 107).

Several objectives and policies in the Commerce and Industry Element of the San Francisco Comprehensive Plan concerning office development, employment and cumulative impacts are relevant to the proposed project.[1]

> Specific Objective 6: "Maintain and improve San Francisco's position as a prime location for financial, administrative corporate and professional activity."
>
> Policy 1: "Encourage continued growth of prime downtown office activities so long as undesirable consequences of such growth can be avoided."

The proposed project would be responsive to a policy for continued office development. However, as noted in the Element such growth

> "while supporting the economic vitality of the City, has not been without its environmental and aesthetic costs . . . assuming these costs are controlled within publicly acceptable limits, the City should encourage continued office growth. It should be made clear to existing and future firms wishing to locate downtown that concern over issues of public cost and environmental impact is not merely opposition to further development but a recognition that there are practical limits to that growth which would benefit residents and businesses alike."
>
> Policy 2: "Guide location of office development to maintain a compact downtown core so as to minimize displacement of other viable uses."

The project site is outside the core of the downtown central business district. However, it is also stated in the Commerce and Industry Element that "should additional office development choose to locate within this adjacent support service area (the C-3-S district), it should not displace viable industrial and commercial uses. Vacant parcels or

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[1] San Francisco Department of City Planning, Commerce and Industry Element Policies and Objectives, adopted by the City Planning Commission, Resolution 8001, 29 June 1978, pages 31, 33 and 34.

buildings should be utilized for potential new development." The project would not displace any existing industrial or commercial buildings. It would displace an automobile parking lot, considered a commercial land use.

Policy 3: "Assure that downtown development is compatible with the design and character of San Francisco."

The visual impact of the proposed project is discussed in Section IV.B. Visual Quality and Urban Design (below).

Policy 4: "Provide adequate amenities for those who live, work and use downtown."

Amenities proposed for this project include a landscaped plaza sheltered from prevailing winds and maximizing solar access, decorative paving and landscaping of the sidewalk areas, landscaped upper level terraces at the 2 major stepped-back portions of the tower, and articulation of the building facade. The project may also have retail commercial space developed at the ground level. (See Section I.B. Project Description and Setting, page 5).

Policy 5: "Control traffic and congestion in the downtown area, particularly from private automobiles."

Traffic impacts associated with the proposed project are detailed in Chapter IV.D., page 66.

B. VISUAL QUALITY AND URBAN DESIGN

The proposed structure would rise 248 feet to the parapet[1] of the 18th floor; an elevator equipment room would rise an additional 14½ feet above the 18th floor (Figure 8, page 14). The proposed structure would be set back 15 feet from Spear and Howard Streets, 20 feet from the parking structure to the east, and 60 to 108 feet from The Embarbacero Freeway to the south. These setbacks also would allow for pedestrian circulation around

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[1] Parapet: a low wall or barrier at the edge of a balcony roof, bridge or the like.

the proposed structure, which would have its main entrances on the east and west. (Figure 4, page 9).

The proposed structure would be visually divided into 3 major elements. The upper 17 stories would be used for office space, and would have a bay window configuration on all elevations, adding visual interest to the tower.

A plaza would be developed on the southern portion of the project site, between the entrance ramp to the underground parking garage and the truck loading area. This location would maximize solar access to the plaza as well as sheltering it from prevailing winds (see IV.F. Air Quality and Climate, page 91). Street trees would be planted along Spear and Howard Streets, and in the passageway between the eastern elevation of the proposed structure and the existing parking structure. Landscaping between the Plaza and the garage entrance ramp would provide a visual screen of the garage entrance for the users of the plaza.

The proposed structure would partially block views of the Bay to the east from the upper stories of 2 adjacent high rise structures to the west of Spear Street. Views from the north and east would not be interrupted, since these views are currently blocked by the elevated Embarcadero Freeway and other structures.

With respect to the proposed building's physical relationship to adjacent structures and the downtown, there are a number of policies contained in the Urban Design Plan of the San Francisco Comprehensive Plan that would allow further assessment of the project's visual and design aspects.[1]

Major New Development Policy 9 "Encourage a continuing awareness of the long-term effects of growth upon the physical form of the city."

City Pattern Policy 3 "Recognize that buildings when seen together produce a total effect that characterizes the city and its districts."

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[1]San Francisco Department of City Planning, Urban Design Plan, adopted by Resolution 6745 of the San Francisco City Planning Commission, 26 August 1971, pages 5, 40, 6, 10, 36, 37, 25 and 57.

New high rise structures gradually are replacing the older 3- and 4-story buildings in the area near the project site. Cumulatively viewed, these high rise structures appear as part of the tapering of height from the taller structures in the Financial District (refer to Figure 20, page 53). The uniform visual effect of benching, formed when several adjacent structures are of similar height and have flat rooflines, has been considered in the roofline treatment of the proposed building. The building would be stepped at the 8th and 16th floors, minimizing the benching effect as well as adding interest to the skyline of the area (Figure 9, page 15).

Major New Development Policy 2 "Avoid extreme contrasts in color, shape and other characteristics which will cause new buildings to stand out in excess of their public importance."

Major New Development Policy 5 "Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development."

Major New Development Policy 6 "Relate the bulk of the buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction."

The terraced form of the proposed structure suggests the massing of the existing structures in the surrounding area. The red brick skin would relate to the older brick structures in the area. However, the dark colors would contrast with the light colors that predominate in the Financial District skyline. In addition, the bay windows would introduce a new more textured and less dominating facade style to the South of Market area. The height of the proposed structure to the roofline would conform to the requirements in the City Planning Code, as well as relate to the newer high rise buildings nearby. The 8-foot parapet and 22½-foot elevator equipment room above the 240-foot height limit would exceed the height requirements in the City Planning Code by 4 feet (Section 260(b)2.(A)) and 6½ feet (Section 260(b)1.(B)), respectively. As required in Section 260(b)1., the area covered by the mechanical penthouse would not exceed 20% of the roof area over which it is situated. The bulk of the proposed structure would not conform to the Planning Code requirements. The diagonal dimension of the structure would exceed the bulk limit by 5.5 feet.

City Pattern Policy 1 "Recognize and protect major views in the city, with particular attention to those of open space and water."

The proposed project does not block views, but rather, would appear as an incremental part of the downtown buildings which block views of the Bay from some hillside locations. The project would be visible from Twin Peaks. It would also be visible from Bernal Heights but would not stand out against the taller backdrop of Financial District buildings in the City skyline (Figures 19 and 20, pages 54 and 55).

Major New Development Policy 1 "Promote harmony in the visual relationships and transitions between new and older buildings."

Conservation Policy 6 "Respect the character of older development nearby in the design of new buildings."

The use of red brick facing on the proposed structure would provide a transition between the new structure and adjacent older buildings since brick is a traditional building material. The clear glass proposed for the base of the building would also relate to the character of nearby older development. In the upper stories, the smoke-colored glass, bay windows and lack of detailing would reflect the current trends in the design and construction of high rise structures.

Neighboorhood Environment Policy 12 "Install, promote, and maintain landscaping in public and private areas."

Neighborhood Environment Policy 13 "Improve pedestrian areas by providing human scale and interest."

The proposed project includes the creation of a plaza and landscaped areas surrounding the base of the building. Additional pedestrian scale and interest would be provided by large clear glass windows at street level that would allow visual access into the lobby and retail spaces. The bay windows also would provide visual interest.

C. EMPLOYMENT, HOUSING, AND FISCAL FACTORS

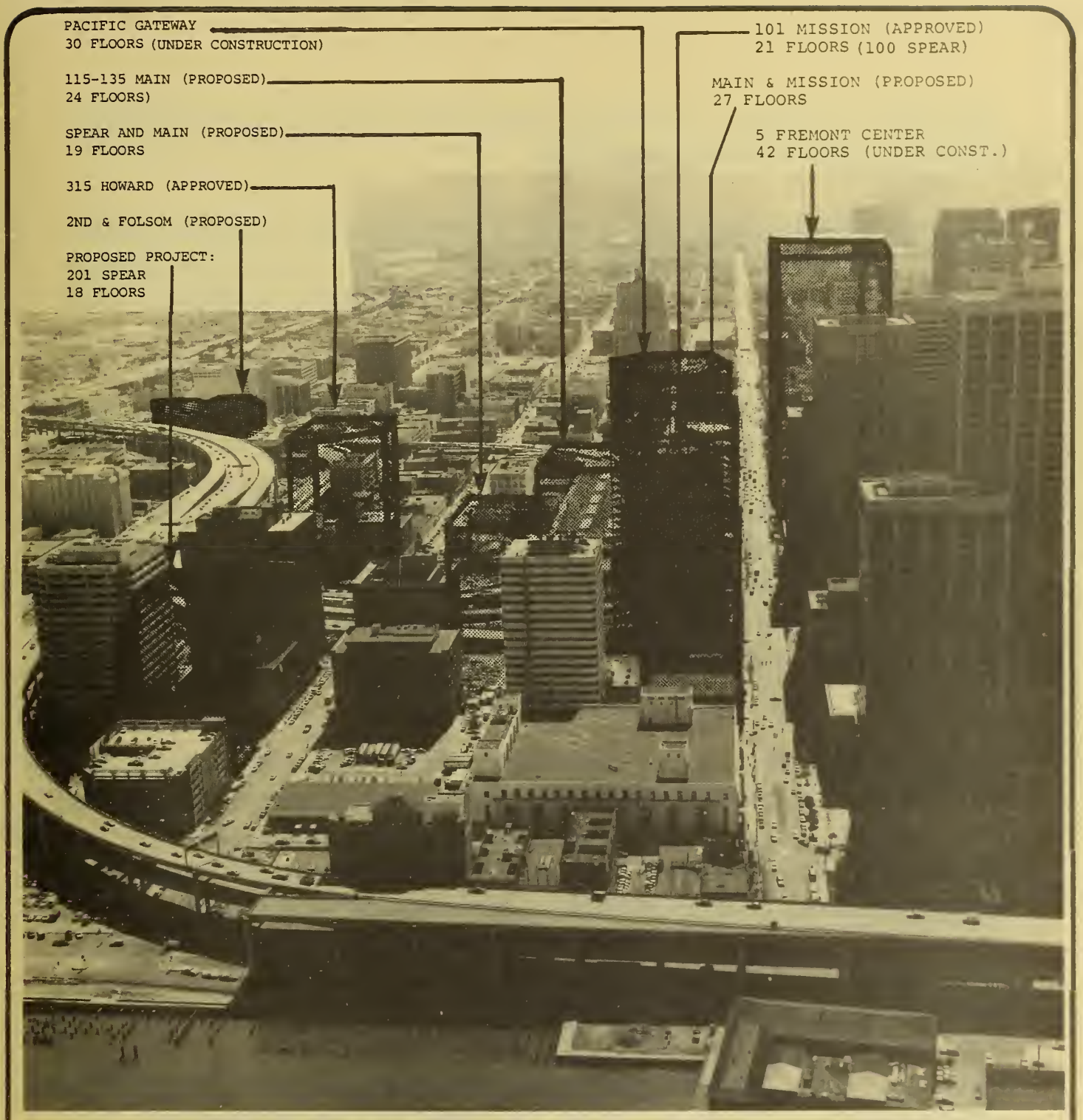
1. Employment

The excavation and construction activities involving the proposed project are estimated to take about 18 months. Approximately 330 person-years of construction labor would be

View toward Project Site from West End of Bay Bridge Span

Source: EIP Corp.
Photo: Doug Donaldson

Figure No.19



Aerial Oblique of Project Area

Source: EIP Corporation
201 SPEAR

Figure No. 20

generated.[1] The maximum construction employment would be about 220 full-time positions at any one time during construction.

As a result of the multiplier effect of project construction, about 510 additional person-years of employment would be generated in the Bay Area.[2] Some of this secondary employment would be in San Francisco, although it is difficult to estimate the actual amount.

When the proposed building is fully occupied, about 1,080 permanent jobs would be provided for office, retail/commercial on the ground floor, and janitorial maintenance. This would include about 1,048 office workers (at 1 worker per 250 square feet of office space for 262,000 square feet), 14 janitorial/service workers (at 1 worker per 12,500 square feet for the entire building) and 14 retail/commercial workers (at 1 worker per 350 square feet of commercial/retail space for 5,200 square feet). The janitorial/service positions could be classified as "blue collar" jobs. The actual number of job opportunities in the proposed project available to San Francisco residents is not known. New tenants could be firms already located in the City (see Appendix D, page A-45).

The jobs generated by the proposed project would result in additional employment through the multiplier effect in the Bay Area. Assuming that the new jobs created as a result of the project were primarily in the finance, insurance and real estate industries, about 1,280 additional jobs in other sectors of the Bay Area economy could result.[3] Although the multiplier encompasses the entire Bay Area, and the number of additional jobs in San Francisco as a result of the multiplier effect is not possible to calculate, it is likely that many of the jobs would be in San Francisco, e.g. bicycle messengers, bus drivers, copy machine repairers, restaurant employees, printers.

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[1] An estimated $18,000,000 (1981 dollars) would be spent during excavation and construction. Assuming labor costs would be about 55% of the total ($18,000,000 x 55% = $9,900,000) including direct wages, payroll taxes and fringe benefits, and assuming an annual cost of $30,000 per construction worker.

[2] A construction multiplier of 1.55 was derived from the San Francisco Bay Area Input - Output Model, 1967 and 1974, Cooperative Extension Service, University of California, Berkeley, July 1978. For each person-year of employment supported by project construction, an additional 1.55 person-years of secondary employment must be supported.

[3] An employment multiplier of 1.18 was derived from the San Francisco Bay Area Input-Output Model 1967 and 1974 Cooperative Extension Service, University of California, Berkeley, July 1978. This is the equivalent of a multiplier of 1.18 for every one job created by the project.

2. Housing

The expansion of downtown office space provides one of the main sources of pressure on San Francisco's housing demand. Regional housing impacts are also experienced. A discussion of regional and San Francisco housing characteristics is included in the Five Fremont Center, Final EIR EE80.268, certified on 12 March 1981, pages 41 and 42, and is hereby incorporated by reference into this EIR.

About 2,360 permanent new Bay Area jobs would be supported by the project's addition to the stock of downtown office space (the 1,080 direct jobs, plus the 1,280 jobs induced by the multiplier).

The project would increase housing demand in San Francisco. According to one study, it is estimated that 15% to 30% of the people newly employed in San Francisco as a direct result of the 201 Spear Street office building would move to the City.[1] If the project generated 1,048 office jobs, approximately 157 to 314 workers may move to the city which could result in a demand for 112 to 224 housing units.[2]

The Department of City Planning estimates that 40% of the office workers newly employed as a direct result of the proposed project would move to the city. Using this estimate, the project may generate jobs for 420 workers and a demand for 233 units.[3]

Table 10, page 58, provides an estimated number of 201 Spear employees able to afford various monthly housing costs if all projected 1,048 employees decided to move to the City and buy or rent housing. The data in this table are based on the assumption that all the employees are part of households and the actual availability of housing is not considered. About 75-76% of the employee households could afford to rent the median studio apartment in the City, and 72-73% (755-765 employee households) of the total could afford to rent a 1-bedroom apartment. About 14-15% could afford to purchase a new single family house and 22-24% would be able to afford the monthly mortgage payments of a condominium.

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[1]This estimate is based on Recht Hausrath analysis in 101 Montgomery EIR, EE 80.26, certified 7 May 1981, pages 301-302.

[2]Based on an average of 1.4 San Francisco workers in each San Francisco household that contains downtown employees. 101 Montgomery EIR EE80.26, pages 81 and 89.

[3]This estimate is based on an average of 1.8 San Francisco workers in each household and is derived from Sedway/Cooke, Downtown San Francisco Conservation and Development Planning Program, Phase I, 1979, page 48.

TABLE 10

Estimated Number of Office Worker Households Able To Afford Various Monthly Housing Costs for the Spear and Main Office Building (Based on 1981 Data)

Housing Type (Rental)	Median Monthly Cost	Number of[1] 201 Spear Employees*	% Able to[2] Afford Cost
Studio Apartment	$ 440	785-795	75-77
One Bedroom	500	755-765	72-73
Two Bedroom	560	700-710	67-68
Three or More Bedrooms	590	690-700	66-67
1980 Census Median Rent	310	1,048	100
(Purchase)			
New Single Family	$1,570	145-155	14-15
Existing Single Family	1,500	135-145	13-14
Condominium	1,140	230-250	22-24
1980 Census Owner-Occupied Dwelling	1,215	210-230	20-22

[1]The numbers of employees presented in the table are based on the assumption that 40% of the project employees would move to San Francisco. Thus, the percentages are applied to a total of 480 employees rather than 1,200. It is further assumed that these 480 employees would have an income distribution similar to all downtown office workers as reported in the 1974 SPUR study (see Table 5a).

[2]The table assumes that all employees are part of households and does not reflect availability of housing, just the affordability. Households are assumed to spend 30% of income on housing.

Source: EIP, based on information in Tables 3 and 4, pages 28 and 29, and 1,048 office employees.

*Numbers are slightly rounded.

It is not known what the availability of housing would be at the time of project completion, but the vacancy rate mentioned on page 25 is not expected to change.

The housing stock in the City is expanding, but it may not be at a rate to accommodate the needs of all the employees who move into San Francisco. Many factors other than job growth caused housing prices to rise both in the City and in the remainder of the Bay Area. Inflation, interest rates, available land, and density limitations are some of the factors that affect housing costs.

Table 3, Appendix D, pages A-53 indicates the direct housing impacts of the project on the 4 areas within the Bay Area, as well as the cumulative impacts of downtown office development. For San Francisco the projected housing demand exceeds projected growth by a factor of nearly 3. The overall jobs/housing imbalance in San Francisco, which is the ratio of the number of jobs to the number of housing units, is estimated to be about 1.65 and ABAG projects an increase to 1.95 by the year 2000.[1]

If the number of secondary employed workers per household is also assumed to be 1.8, the secondary employment generated by the project would create demand for an additional 760 housing units throughout the Bay Area.

3. Fiscal Considerations

a. Revenues

The proposed project would generate revenues from property tax, business tax, utility users tax, and possibly sales tax from the retail/commercial area and parking tax from the garage (although the 50 spaces may be reserved for tenants).

Assessed Valuation and Property Tax. Based on replacement costs, the minimum fair market value of the proposed project would be approximately $24,600,000 in 1981 dollars. Assuming that the property would be assessed on the basis of full replacement costs, the assessed value of the project could also be about $24,600,000. Total annual property taxes would be about $246,000 at 1% full value allowed under Proposition 13, plus an additional levy for repayment of existing bonds previously approved by the electorate (the current total rate for the 1981-1982 fiscal year is $1.19 times 1% of assessed value) leading to a

[1] Association of Bay Area Governments, Population Employment Housing Projection 1980-2000, Projections 79, pages II-7, 10.

total that could range from $246,000 to $292,700. It is not known how the property taxes would be distributed in the year of completion of the project (1984); however, applying the 1981-1982 rate, San Francisco could receive from $195,000 to $232,000 from the project (79.3% of the total composite property tax revenues). Subtracting the market value of the existing land and improvements on the project site which total about $1,970,000, the net addition of the San Francisco property tax base would be about $22,600,000. The net increase over existing composite property tax revenues to San Francisco would be between $171,500 to $208,500.

Business Tax. Business tax is actually comprised of 2 taxes: gross receipts tax and payroll tax.[1] Revenues from these taxes would be generated by businesses which occupy the project and by owners of the project who would pay a tax on the rents they receive. Business tax revenues have been estimated at $487,000 for every million square feet of office space.[2] Therefore, business tax revenue from the project would be $127,800 (in 1980-1981 dollars).

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[1]San Francisco business with over $250,000-$500,000 in gross receipts (depending on which of the 15 classifications includes their firm) or over $45,450 in reported taxable payroll pay either of 2 taxes. The gross receipts tax is calculated by applying the rate specific to a firm's business classification to the firm's gross receipts; rates range from 1 dollar per $1,000 to 2 dollars per $1,000. The payroll tax is calculated by applying a rate of 1.5% to a firm's reported taxable payroll. Each firm is supposed to calculate its tax based on both methods and pay the larger amount of the two.

[2]Gruen + Gruen Associates, Fiscal Impacts of New Downtown High-Rises on the City and County of San Francisco, March 1981, page 116 and Arthur Anderson and Co., Downtown High-Rise District Cost-Revenue Analysis, November 1980, pages 35-38. These estimates were based on actual tax collections by the City for the C-3-0 District divided by an estimated 39 million square feet. The calculations for 201 Spear are based on 262,400 gross square feet of office space times $487,000 divided by 1,000,000.

The source is used in this report because it is the only recent estimate of business tax revenue collections relevant to new downtown office buildings. (The SPUR Impact of Intensive High-Rise Development on San Francisco, June 1975, pages 246-248 would estimate: 1,048 x $25,650 mean payroll per employee updated to 1980-1981 dollars x 1.5% tax rate x 55% probable tax revenue = $221,800.

Sales Tax. Sales tax revenue would be generated by the purchases made by project employees, and the possible retail sales made in the rental space on the first floor of the project.[1] Taxable purchases by project employees would be about $14,700, sales tax revenues from the 5,200 square feet of retail space could be about $13,800.

Utility Users Tax. Utility users tax revenue is paid on the cost of electricity, gas, water, and telephone use. Revenues from office buildings average about $62,000 per million square feet of space.[2] Assuming that the cost of the utilities on the average grows at the rate of inflation, the office portion of the project would yield about $16,000.

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[1]The sales tax revenue from the project is estimated as the greater of these 2 sources. To count them both would be to double-count some sales tax that, for example, are made by project employees in retail stores in the buiding. The taxable expenditures per office worker within the central business district were calculated by using the SPUR figure of $715 (Impact of Intensive High-Rise Development in San Francisco) updated to 1981 by adding 57% (The average weekly earning increase of finance, insurance, real estate and service workers between 1974 and 1980-1981 as indicated in the U.S. Bureau of Labor Statistics, Monthly Labor Review, Washington, January 1981). Thus, taxable expenditure per employee in 1980-1981 are $1,123. Sales tax revenues, at a 1% tax rate for revenues to the City and County of San Francisco general fund would be

1,048 employees x $1,123 taxable sales x
1% tax rate = $11,800

In addition, sales tax revenues, at a ¼ tax rate, are distributed to the local transportation fund administered by the Metropolitan Transportation Commission among BART, Muni, AC Transit, Golden Gate Transit, and SamTrans. For the project these revenues would be about $2,900.

Sales tax revenue per 1 square foot of commercial space is estimated to be $2.66 based on an estimated 3,097,000 square feet of commercial area in the C-3-0 District and 1980-1981 allocation of $8,250,000 in Sales Tax Revenue (Gruen + Gruen Associates, page 111, City and County of San Francisco Appropriations Ordinance (1980-1981) and Arthur Andersen & Company, Table II-4).

[2]Gruen Gruen + Associates, Fiscal Impacts of New Downtown High-Rises on The City and County of San Francisco, March 1981, page 120. This estimate was based on estimated Citywide revenue from the utility users tax in the 1980-1981 Appropriations Ordinance adjusted to isolate the revenues from the C-3-0 area. For comparison, an estimate using the approach from the 101 Montgomery Street FEIR EE 80.26, certified 7 May 1981, page 90, would indicate higher revenue of $31,600 compared to $16,000 in the text above. (This alternate method involves multiplying annual use estimates by utility charges and then by tax rates to estimate tax revenues. Use estimates for electricity and gas are on page 98.

Other Local Revenues. The 50-vehicle parking garage may reserve some spaces for the general public to use on a short-term basis. A parking tax of 15% of gross sales would be levied on those spaces available to the public.

Total Revenues. The potential increase in revenues to San Francisco could range from $330,000 to $367,000;[1] this range, however, is subject to variables that could affect the estimate:

- Property tax distribution could change in the ensuing years
- Payroll tax could vary according to the salaries of the employees in the proposed project
- Rents of the offices may change, thereby affecting the gross business tax and real estate transfer tax
- Cost for utilities, particularly telephone, are also variable.

b. Costs

Since 1979, a number of studies have analyzed one aspect or another of downtown's impact on the City's fiscal helath. Only one of these studies, Fiscal Impacts of New Downtown High-Rises on the City and County of San Francisco (Gruen Gruen + Associates, March 1981), developed estimates of the additional public service costs of new development.[2] In this study, the consideration of costs was limited to the direct costs of services provided wthin the physical limits of the C-3-0 district. These cost figures are used in this EIR to provide an indication of the direct costs that would be attributable to the project for increased public services (other than those associated with Muni). While a broader definition of costs could result in higher cost estimates, the direct

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[1]The addition of net increase of property revenues ($171,500 to $208,500); business tax revenues ($127,800); sales tax revenues ($14,700); and utility users tax ($16,000).

[2]Studies done by Arther Anderson & Company (Downtown Highrise District Cost Revenue Study, November 1980 for the San Francisco Chamber of Commerce) and by David Jones (Downtown Highrise District Cost Revenue Study, February 1981 for San Franciscans for Reasonable Growth) examine the fiscal impact of the existing downtown. The three other studies address the question of what the fiscal impact of new development would be (Gruen Gruen + Associates study citied above; Sedway/Cooke et al., "Fiscal Concerns" in Downtown San Francisco Conservation and Development Planning Program, Phase I Study, October 1979; and Recht Hausrath & Associates, "Fiscal Considerations," Appendix C, 101 Montgomery Street FEIR EE80.26 certified 7 May 1981.) Of these three only the Gruen Gruen & Associates study developed estimates of the additional service costs associated with new development. (See 101 Montgomery FEIR EE80.26, pp. 191-196 for a summary comparison of these five fiscal studies.)

costs defined here represent a large part, if not all, of the relevant costs of new development.[1]

The costs of the project would depend, in part, on the timing of the project in relation to other new projects in the City. This is because at various levels of cumulative development, service thresholds are met that require large capital expenditures. For the purposes of this analysis, it is assumed that the proposed project would be completed after the addition of 10 million square feet of office space to the 1980 stock downtown, but before the addition of 15 million square feet. Given the amount of space already approved, this seems to be a reasonable assumption.[2]

Direct public service costs for fire, police, public works, general government, and other services have been estimated to be $0.227 per net addition of 1 square foot of downtown office space.[3] The project would result in a net addition of 262,400 square feet of space.

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[1]The main area of possible disagreement with the costs from the Gruen Gruen + Associates study is likely to involve the definition of costs. For example, David Jones' study criticized the use of a similar "direct cost" definition in the Arthur Anderson study saying that downtown should pay for services provided outside the C-3-0 area as well (noting Citywide recreation and cultural facilities like Golden Gate Park and the Performing Arts complex as examples). There has not been a study that identifies how new downtown development affects costs for these services. Nor is there agreement on definitions or an accepted methodology for how this should be done. Recognizing potential differences in definition, it is still possible to consider the direct costs defined here as at least part, if not all, of the relevant costs of new development. (Also see 101 Montgomery Street FEIR, EE 80.26 p. 310 and pp. 314-315).

[2]As shown in Appendix D, Tables 2 and 3, page A-46-A-47, about 9.3 million square feet will be added downtown when all of the approved projects (as of November 1981) are built.

[3]Gruen Gruen + Associates, Fiscal Impacts of New Downtown High-Rises on the City and County of San Francisco, March 1981, p. 99. From the figures in Table III-42, p. 99, total added direct service costs for the next 5 million square feet after 10 million square feet have been added to the 1980 stock downtown equal $1,494,031. This figure minus the additional cost for Muni of $357,690 equals the direct cost for services other than Muni of $1,136,341. This amount divided by 5 million square feet equals the cost per square foot of $0.227. (The costs for Muni are excluded here because the PUC staff has since developed more current Muni cost estimates.)

These additional direct costs generated by new downtown development were estimated based on interviews with agency staff and on examination of the Arthur Anderson & Company study of current downtown service costs, computer print-outs from City departments, and City budgets and appropriations documents. Cost estimates assume that current service levels downtown would be maintained as the amount of building space increases.

The net increase in direct costs (excluding Muni and BART) resulting from the project would be $59,500 (1980-81).[1]

Muni Costs. The City's general fund provides a subsidy to the Municipal Railway's operating budget. The subsidy covers the difference between Muni's costs and the revenue Muni receives from fares and from the federal and state governments. This subsidy represents the cost of Muni to the City.

Marginal capital and operating costs per peak period Muni ride are $0.7067.[2] Because the fare revenue per pasenger trip is $0.3181,[3] the net marginal cost (or increase in the deficit) per peak period ride is $0.3886.[4] The Transportation Impact section (page 65) estimates there would be 235 afternoon peak transit trips on Muni. Doubling this for morning plus afternoon peak trips, there would be 470 peak hour Muni trips per day. This

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[1] 262,000 gross square feet x $0.227 = $59,500.

[2] Bruce Bernhard, "The Marginal Cost of Peak Period Muni Passenger Trips Per Unit of Office Space," San Francisco Public Utilities Commission, February 1981. "Marginal" costs represent the costs per additional peak period passenger trip. The relevant measure of the impact of the proposed project is the additional or marginal cost per passenger trip generated during peak hours. This cost estimate (in 1980-81 dollars) includes operator labor, maintenance labor, fuel or power, other direct operating costs, parts, and amortization of incremental vehicles (expressed as a weighted average of modes). This estimate includes the marginal costs incurred by added passengers from a new downtown building. It does not allocate any incremental facilities costs (garage space or storage) nor any incremental supervisory staff costs although such costs would also be incurred at some level.

[3] Ibid. Fare revenue per passenger trip is estimated assuming only adult riders, 85% of whom are estimated to use passes at a net marginal revenue of $0.286, and 15% of whom pay cash for a net marginal revenue of $0.50.

[4] Bruce Bernhard, "The Marginal Cost of Peak Period Muni Passenger Trips Per Unit of Office Space," San Francisco Public Utilities Commission, February 1981.

This estimate differs from those used in previous EIRs. The 101 Montgomery Street FEIR (EE 80.26) pp. 85-86 and 316-318 identified the average 1980-81 general fund deficit per ride taken with a Fast Pass as $.029 This figure did not include any capital costs. In that analysis, it was noted that while this figure was the best available estimate, it is not a good measure of the costs of providing additional Muni service downtown. Since then, the PUC staff has developed new cost information to estimate the additional or marginal costs. The net marginal cost or (incrase in the deficit) per additional peak period trip of $0.3886 (1980-81 dollars) includes the capital cost for vehicles. The more recent figures were developed as part of the transit development fee ost analysis.

increased demand for Muni services would cost $47,500 (1980-81 dollars).[1] (Because the existing site is vacant, it creates no cost for Muni and so the net increase in costs, or deficit, would also be $47,500.)[2]

BART Costs

BART fares cover about 43% of BART costs.[3] For each BART passenger trip an average of $1.00 is contributed in fares, and an additional $1.33 in costs must be supported by some other revenue source.[3] It is estimated that about 125 employees in the new building would ride BART to work (Transportation Impacts, Table 10, page 68). The project would generate a deficit of about $62,200 in 1981 dollars.[4]

c. Direct Costs and Revenues

The proposed project would increase the general fund revenues to the City by about $330,000 to $367,000 (1981 dollars). Direct costs within the downtown area for increased services other than Muni could increase by about $59,500. Costs to the City's general fund for increased Muni service downtown would increase approximately $47,500. A proposed Transit Impact Fee could lower this amount depending on the rate of return (assuming that the fee is implemented and that there is no state or federal aid to cover vehicle capital costs).[5]

Comparing these figures indicates a net revenue increase of about $223,000-$260,000 to San Francisco. While the accuracy of the estimates could be debated, this comparison indicates that a net revenue increase would still result for the short term even if the direct cost estimates here were considered low by a factor of 100% or more. It also indicates that there would be revenue to offset other costs in addition to the direct costs

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[1] 470 peak rides per day x 260 work days per year x $0.3886 cost per rise = $47,500.

[2] The project would also help to pay for the Muni deficit thorugh its revenue contributions to the general fund. In the 1981-1982 budget, 7% of the discretionary general fund revenues were allocated to Muni.

[3] Department of City Planning, 101 Montgomery EIR, EE.80.26, Certified 7 May 1981, page 42.

[4] 250 rides x 260 working days x 1.33 = $86,500 - $18,400 (estimated contribution of property tax at 6.3% of $1.19 tax rate per 1% assessed value) - $5,900 (estimated ½% sales tax revenue to BART) = $62,200.

[5] The transit development impact fee became law in San Francisco on 5 June 1981 (Ordinance 224-81), however, the legality of this Ordinance is currently being challenged in San Francisco Superior Court and the fee is not being collected.

included here, if other definitions of increased costs are used. Alternatively, the net revenue increase could be viewed as funds available for City services other than those directly provided in the downtown area.

d. Long-Term Fiscal Impact.[3]

Though the project would generate revenues in excess of the direct costs it imposes initially, the difference between costs and revenues would narrow over the years. This is because costs can be expected to rise with inflation, while revenues would grow more slowly as a result of the Proposition 13 limitation on property tax revenue growth to 2% per year unless a property is sold. Other revenue sources would grow at inflation. If all current sources of revenue associated with the proposed project are held constant (i.e. fees and rates do not change and no new assessments levied) costs would eventually exceed revenues.

D. TRANSPORTATION

1. Project and Cumulative Trip Generation/Distribution

The City's transportation impact analysis guidelines[4] suggest that 17.5 daily person trips should be assumed as the trip generation rate per 1,000 square feet of leasable area in an office project.

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[1]The conclusions here as to direction of fiscal impact are similar to the generalized conclusions in previous EIRs. (See particularly 101 Montgomery Street FEIR (EE 80.26), pp. 82-88 and 309-326.) For comparison, the three recent fiscal studies which considered whether the City's fiscal situation would be better in the future with new development than without it answered the following: (1) probably yes (Appendix C in 101 Montgomery Street FEIR); (2) apparently yes (Gruen Gruen + Associates study); and (3) no, unless new revenue sources are found (Sedway/Cooke study that was done before the transit development fee was initiated). (For more comparison, see p. 196, 101 Montgomery Street FEIR, EE 80.26)

[4]San Francisco Department of City Planning, Guidelines for Environmental Evaluation - Transportation Impacts, June 1980, (revised October 1980).

The proposed project would have a net office area of 229,000 square feet and a net retail/service area of 5,000 square feet. The proposed project would generate 4,100 daily person trips of which approximately 2,350 would be work trips and 1,750 would be non-work trips. Approximately 825 of the daily trips would occur during the evening peak hour.[1] (See Table 11, page 68 for trip generation calculations.)

In comparison with the foregoing figures, the City projection of cumulative travel for other downtown projects (approved through October 1980) is approximately 25,500 peak hour person trips.[2] In addition, a preliminary review of projects approved from November 1980 through October 1981[3] indicates about 7,800 additional person trips. The 201 Spear project would amount to about 2-3% of the cumulative peak hour trip generation of these projects.

In addition to the 33,000 additional peak hour trips generated by approved development, proposed development would add further trip generation. About 9.3 million square feet of additional office space has been proposed in the downtown for a total cumulative development of about 18 million square feet.[4] If approved this development

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[1]San Francisco Department of City Planning, Guidelines for Environmental Evaluation - Transportation Impacts, June 1980, (revised October 1980).

[2]Ibid.

[3]Peak hour trip generation was compiled for the following projects approved through October 1981:

- 444 Market (Shaklee)
- Pacific III
- Levi's Plaza
- 101 California Street
- Federal Reserve Bank
- 1 Montgomery (Crocker Tower)
- 1 Sansome Street
- 150 Spear Street
- Embarcadero 4
- Daon Building (Battery and Sansome)
- Pacific Lumber Building (Washington and Sansome
- 456 Montgomery Street
- 315 Howard Street
- Pacific Gateway
- 10 United Nations Plaza
- 1170 - 1172 Market Street
- 750 Battery Street
- 550 Kearny Street
- Ramada Hotel
- Holiday Inn
- 5 Fremont Center
- 101 Montgomery
- China Basin
- 50 Grant
- 25 Jessie
- 101 Mission
- 1155 Market
- Hilton II Tower
- Holiday Inn (Civic Center)

[4]Memorandum Report from Dean Macris, Director of Planning, to the San Francisco Planning Commission, "Alternative Interim Controls on Downtown Development," 18 November 1981.

TABLE 11

PROJECT TRIP GENERATION

Project Component	Daily Trip Rate	Daily Trips	PM Peak Hr. %	PM Peak Hr. Trips
- 229,000 sq.ft. office	17.5/1000	4,010+	20%	800+
- 5,000 sq.ft. retail/ support	50*/1000	250+	10%	25+
				825+

*A trip rate of 100 trips/1000 sq.ft. has been obtained from the following sources:

Institute of Transportation Engineers, Trip Generation, 1979; and Caltrans District 4, Eleventh Progress Report on Trip Ends Generation, 1976. The two generation rates have been reduced by 50% to reflect retail/support trips internal to the proposed project. Source: Field surveys conducted November 6, 1981 at the Fox Plaza and Bank of America (Market/11th) office buildings.

would add about 33,000 further person trips for a total of about 66,000 new person trips during the p.m. peak hour.

Based upon the suggested modal split in the City guidelines, the apportionment of project trip generation has been calculated and compared to cumulative trip generation of other development. The various trip totals are outlined in Table 12, page 70.

2. Impacts on the Street System

Traffic volumes in the vicinity of the project site are given in Table 13, page 71. In general, stable traffic flow conditions (Service Level 'C" or better, as outlined in Appendix B, page A-37) can be maintained on 2-lane streets carrying 10,000-12,000 daily vehicles and 4-lane streets carrying 20,000-25,000 daily vehicles.[1] Within these criteria, the streets listed in Table 13, page 71 are experiencing stable traffic flow.

A more specific analysis of traffic flow quality examines the peak traffic flow at signalized intersections. Turning movements were counted during the peak hour at 4 intersections near the project site: Mission/Main, Mission/Beale, Mission/Spear and Howard/Main. Using a "critical movement analysis,"[2] the service levels of the intersections have been calculated and are shown in Table 14, page 72. As this table indicates, peak hour traffic flow would be unstable at the Mission/Main and Mission/Beale intersections. The traffic flows during the peak 15 minutes are 10-15% higher than the average during the peak hour. During these peak 15 minute periods, service levels would be about 1 level lower and congestion would be more severe.

Another constraint on vehicle access is the downtown freeway network. The Interstate 80 and Highway 101 freeways are currently operating at jammed conditions (typified by Service Level F) during the evening peak hour.[3] The peak hour generally occurs within 3-

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[1]Institute of Transportation Engineers, Transportation and Traffic Engineering Handbook, Prentice-Hall, New Jersey, 1976, pp. 337, 338.

[2]Critical Movement Analysis" described in Circular No. 212, Transportation Research Board, January 1980.

[3]Scott MacCalden, Senior Engineer, Highway Operations Branch, CalTrans, telephone conversation, 28 December 1981. The peak hour generally occurs within the 3-6 p.m. period but the specific peak hour varies daily.

TABLE 12

Project and Cumulative Trip Generation
During PM Peak Hour

(For Projects Approved Through October 1981)

Mode and Distribution	Project	Other Development	Total
Auto	295	12,010	12,305
MUNI	235	9,470	9,705
BART	125	4,730	4,855
AC	70	2,530	2,600
SAMTRANS	10	450	460
SP	35	1,330	1,365
GGT	40	1,440	1,480
FERRY	10	400	410
OTHER	25	670	695
TOTALS	845	33,030	33,875

TABLE 13

Existing Traffic Volumes[1]

Street Segment	Daily Traffic (Date of Count)	P.M. Peak Hour Traffic (Date of Count)
Spear Street[2] (north of Howard)	4,691 (Jan. 1978)	428 (Jan. 1978)
Howard Street[2] (at Spear)		
Eastbound	2,753	302
Westbound	5,044 (Jan. 1978)	604 (Jan. 1978)
Howard Street[3] (east of Beale)		
Eastbound	N/A	100
Westbound	N/A	1,090 (April 12, 1979)
Beale Street[3] (north of Howard)	N/A	570 (April 12, 1979)

[1]These costs counts are more than 2 years old and are presented for informational purposes only. The actual traffic analysis relied upon peak hour intersection counts conducted in 1981 (see pages A-33 to A-36 in the Appendices).

[2]Counts conducted by Traffic Engineering Division, San Francisco Department of Public Works.

[3]Counts conducted as part of FEIR 315 Howard Street Office Building, EE 79.196, Certified 21 August 1980.

TABLE 14

Projected Service Levels

	Existing Service Level	Service Level in 1983 Without Project	Service Level in 1983 With Project
Mission/Main	B	D/E	D/E
Mission/Beale	C	E	E
Mission/Spear	A	A	A
Howard/Main	A	B/C	C

6 p.m. period, but the specific peak hour varies daily. The peak hour is 10-20% higher than the other 2 hours in the 3-6 p.m. period. With the cumulative downtown development approved through October 1981, the peak hour traffic flows would probably extend throughout the 3-6 p.m. period. Thus, the overall congestion on the freeway could affect the flow on specific freeway links or individual ramps. The 101 corridor north (Van Ness, Franklin, Lombard, Golden Gate Bridge, etc.) also operates at capacity (service level E) during the p.m. peak hour.

About 12,305 new p.m. peak hour auto trips are projected to be generated by cumulative downtown development (Table 10, page 70). No statistics are available for comparing this increase to existing downtown peak hour traffic. Based upon comparisons available for other modes, total peak hour auto travel in the downtown area could increase by approximately 30%.[1] If the 30%-increase and the increase generated by the proposed project are applied to the peak hour volumes obtained for the intersections, the service levels shown in Table 14, page 72 would result.

The freeways and freeway ramps would be the critical links in the overall network. With these facilities currently operating under congested conditions during peak hours, the traffic increases generated by cumulative downtown development would add to this congestion, probably resulting in extended travel delays. It is projected that travel delays would increase in proportion to the 30%-increase in downtown trip generation. These delays would effectively extend the peak hour commute period.

A further concern is related to the potential demolition of The Embarcadero Freeway. Its removal would add traffic to surface streets and could direct further traffic on to on/off ramps in the vicinity of the proposed project; specific impacts are under study.

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[1] In order to compare existing and projected downtown traffic, it would be necessary to first identify the existing p.m. peak hour outbound traffic volumes on all major freeways and surface streets serving the downtown. Such traffic volume data are not available. A similar comparison has, however, been prepared for MUNI lines serving the downtown. Assuming modal splits would continue at about the same ratios, increases in auto trips would be proportional to patronage increases on Muni.

3. Transit Impacts

San Francisco Municipal Railway. MUNI operates 32 routes within walking distance (2,000 feet) of the project site (Table 15, page 75).

Based on a City study[1] and a review of approved office projects patronage statistics for all downtown routes have been projected to 1983. The projections include existing patronage as well as projected patronage attributed to other committed development in the downtown area through October 1981. In Table 15, page 75, the p.m. peak hour patronage capacity and load factors are shown for the relevant lines (those lines serving the project area). A total of 19 lines (serving the project site) will operate over capacity in 1983. Because capacity is based upon 150% of the available seats, any load factor over 1.00 reflects crowded conditions that would exceed the prescribed maximum capacity set forth by MUNI policies.

The additional peak hour patronage due to the proposed project was added to the existing patronage on a proportional line by line basis. As indicated in Table 15, page 75, the project would increase the 1983 load factors by not more than 1% and one additional line would reach a 1.00 load factor. However, passengers riding the 20 lines with load factors greater than 1.00 would continue to experience overcrowding.

Muni plans[2] (in anticipation of patronage growth) project a 10-15% increase in the system capacity of 1986. This increase would reflect added capacity in the MUNI Metro light-rail service, and the replacement of existing buses with articulated coaches. This capacity increase would tend to reduce the projected load factors, but cannot be specifically quantified; benefits, however, would depend upon a more detailed improvement program with capacity increases cited for each route. Even with a 10-15% capacity increase, 15 of the 32 lines listed on Table 15, page 75, would have load factors approaching or exceeding 1.00.

Muni service could also be affected by increased vehicular and pedestrian activity. Cumulative downtown growth would add traffic and pedestrian volumes to the various streets and crosswalks in the project area. These increased volumes would add to traffic

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[1]San Francisco Department of City Planning, Guidelines for Environmental Evaluation - Transportation Impacts, 3 July 1980 (revised October 1980).

[2]San Francisco Municipal Railway 1981-86 Muni 5-Year Plan, 15 May 1981, pages 2-249 - 2-252.

TABLE 15

MUNI Patronage Summary
PM Estimated Peak Hour-Outbound Direction

(MUNI Lines Within 2,000 Feet of Project Site)

	1983 PATRONAGE			LOAD FACTORS		
LINE	WITHOUT PROJECT*	WITH PROJECT**	CAPACITY	EXISTING	1983 WITHOUT PROJECT	1983 WITH PROJECT
1X	816	823	750	0.82	1.09	1.10
2	763	770	600	0.95	1.27	1.28
5	1,313	1,325	1,275	0.77	1.03	1.04
6	668	674	675	0.74	0.99	1.00
7	437	441	450	0.73	0.97	0.98
8	876	884	1,125	0.59	0.78	0.79
9	706	712	750	0.71	0.94	0.95
11	899	907	750	0.90	1.20	1.21
12	649	655	525	0.93	1.24	1.25
14	1,620	1,634	1,275	0.95	1.27	1.28
14GL	338	341	300	0.84	1.13	1.14
14X	872	880	675	0.97	1.29	1.30
15	1,180	1,191	975	0.91	1.21	1.22
21	881	889	825	0.83	1.07	1.08
27	209	211	300	0.53	0.70	0.70
31	667	673	525	0.95	1.27	1.28
32	554	559	1,050	0.40	0.53	0.53
38	1,316	1,328	1,125	0.88	1.17	1.18
38L	872	880	675	0.97	1.29	1.30
38AX	672	678	600	0.84	1.12	1.13
38BX	258	260	300	0.65	0.86	0.87
41	No statistics available					
42	308	311	300	0.77	1.03	1.04
61	No statistics available					
71	505	510	375	1.01	1.35	1.36
72	368	371	300	0.92	1.23	1.24
80X	577	582	600	0.72	0.96	0.97
J	1,063	1,073	1,235	0.65	0.86	0.87
K	4,155	4,192	3,900	0.80	1.07	1.07
L	No statistics available					
M	No statistics available					
N	2,732	2,756	2,400	0.85	1.14	1.15

*Capacity, patronage (without project) and load factors (without project) obtained from Guidelines for Environmental Evaluation - Transportation Impact, Department of City Planning, San Francisco, 3 July 1980, revised October 1980. (Updated to include projects approved between November 1980 and October 1981.)

**Patronage and load factors (with project) reflect a line by line proportional distribution of the proposed project's estimated MUNI patronage.

congestion, vehicle queues, and the potential for conflicts with Muni coaches. The conflicts and congestion would be most disruptive along Mission Street. As a primary transit corridor for Muni, any increases in traffic and pedestrian crossings could delay and disrupt Muni service. The cumulative effect of increased auto, truck and pedestrian traffic on Muni would require that future service levels of all intersections in the downtown area be calculated. The calculations would require 1) traffic, turning movement, and pedestrian counts for all streets and intersections in the downtown, 2) information on trip origins and destinations of proposed development, and, 3) locations of proposed developments, and assumptions as to trip origin and destinations of proposed developments. Assumptions could be made about delays Muni would experience based on this information; it would be difficult to assign a specific time or value to the delays. Based on assumptions required, values would probably not be statistically valid.[1]

Muni service could also be affected by increased vehicular and pedestrian activity. Cumulative downtown growth would add traffic and pedestrian volumes to the various streets and crosswalks in the project area. These increased volumes would add to traffic congestion, vehicle queues, and the potential for conflicts with Muni coaches. The conflicts and congestion would be most disruptive along Mission Street. As a primary transit corridor for Muni, any increases in traffic and pedestrian crossings could delay and disrupt Muni service.

BART. BART staff[2] have provided the following p.m. peak hour operating statistics for outbound trains at their peak load points (during April-June 1981):

TABLE 16

BART Peak Hour Operating Statistics

	East Bay	Daly City
Seats	8,640	6,199
Passengers	11,859	5,946
Average load factor	1.37	0.96

Source: John Stamas, BART Planning Staff, (surveys conducted in July 1981).

[1]Glenn Erikson, Transit Preferential Street Coordinator, Department of City Planning, conversation, February 5, 1982.

[2]John Stamas, BART Planning Staff, personal communication, 10 August 1981.

With heavier ridership during portions of the peak hour, certain trains experience load factors which are approximately 10% higher. In April and May of 1981, BART transbay patronage was 11-12% above predictions, about 84,000 person trips/day.[1]

Cumulative downtown development would increase BART ridership by 4,730 peak hour trips; the proposed project would add 125 trips to this increase. With the added patronage outlined in Table 12 (page 70) average peak hour load factors would be of 1.7-1.8 on East Bay trains and 1.2 - 1.3 on Daly City trains. Higher factors would be experienced on certain peak trains. BART's short-term (5-year) improvement programcalls for an approximate 20%-increase in capacity (with added cars and some decrease in headways).[2] These improvements would allow the peak hour load factors to average 1.3-1.4 on East Bay trains and 1.0-1.1 on Daly City train.

AC Transit. AC Transit operates approximately 200 buses outbound from the Transbay Terminal during the p.m. peak hour. Based on a capacity of 125% of available seating (AC policy accepts 25% standees) and an average of 50 seats per bus, a capacity of 12,500 passengers is available. With a current peak hour patronage of 9,000 during this peak hour, the overall capacity reserve is 3,500. Certain of the peak runs have higher load factors and therefore no excess capacity.

Cumulative development would generate about 2,500 trips, absorbing most of the 3,500 person excess capacity. The proposed project would contribute about 2-3% of these additional trips (see Table 12, page 70). AC Transit staff indicate that the capacity will be increased approximately 10% over the next 3-4 years and this increase will raise the

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[1]BART Office of Research, BART Patronage Report No. 104, May 1981, Attachment 1.

[2]Ward Belding, BART Planning Staff, telephone conversation, 23 July 1980.

capacity reserve to about 4,750 peak hour persons.[1] As outlined in Table 12, page 68, cumulative development would generate 2,600 new trips, leaving a reserve of about 2,150.

Golden Gate Transit. Golden Gate Transit operates 147 buses out of the downtown area during the afternoon peak hour, about 120 buses on Financial District routes and 27 buses on Civic Center routes. On the average, these buses run at their design capacity level as set by Golden Gate policy, (i.e. at seating capacity). Golden Gate Transit allows a maximum (crush) capacity of 55 passengers per bus, corresponding to 10 standees, which equates to 8,085 peak hour riders. Current peak hour ridership out of downtown is estimated at 6,620 passengers. On certain peak runs, more than 10 standees may be present.[2]

With a design capacity of 8,085 peak-hour bus passengers, the effect of cumulative downtown development would be to raise patronage beyond this figure. The proposed project would contribute about 2-3% to the increase (see Table 12, page 70). Because of limitations, the District would probably not be able to increase its capacity[3] to accommodate the increased demand.

SamTrans. There are currently 12 SamTrans buses leaving the downtown area during the afternoon peak hour. They operate at about 90% of seating capacity, corresponding to peak-hour ridership of about 510 passengers. Assuming a maximum capacity of 125% of available seats, it is estimated that there is a reserve capacity for 240 passengers.[4]

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[1]Gene Gardner, AC Planning Staff, telephone conversation, 27 March 1981.

[2]Alan Zahradnik, Golden Gate Transit Planning Staff, telephone conversation, 27 March 1981.

[3]Peter Dyson, Golden Gate Transit Planning Staff, telephone conversation, 17 July 1980.

[4]Larry Stueck, SamTrans staff, telephone conversation, 27 March 1981.

The patronage from cumulative development would appear to exceed the available 240-passenger reserve capacity of SamTrans. The proposed project would add approximately 2-3% to the trips generated by new development (see Table 12, page 70). No specific capacity improvements have been cited by the District.

CalTrans Peninsula Rail Service. Current service provides 11 southbound trains with 9,000 seats during the p.m. peak hour. The current load factor (based upon 1 seat per passenger) is 0.83, or approximately 7,470 passengers.[1]

CalTrans Peninsula Rail service will be improved with the addition (within 3-5 years) of approximately 1,200 seats to the southbound peak hour capacity. With the system's existing reserve capacity of about 1,530 seats, the total capacity reserve would be about 2,730 seats. Thus, the addition of about 1,300 new peak hour passengers (due to cumulative downtown development) could be accommodated. The proposed project would contribute approximately 2-3% to this added load (see Table 12, page 70).

4. Parking Impacts

Based upon the trip generation characteristics,[2] the proposed project would require about 415 parking spaces. Parking for 50 cars (for tenant use) is proposed as part of the project; the remaining demand would be accommodated at other locations in the area. Parking inventory/occupancy surveys in the area indicate current occupancy rates of over 90%. The proposed project would also displace a total of 160 parking spaces in an existing surface lot on the project site. This displacement would cause motorists to seek other nearby parking facilities. The increased demand due to the project and the parking displacement would effectively raise the parking occupancy from 92% to 100%+ within the area surveyed. In addition, the cumulative downtown development projected for the next 3 years would add to the parking demand in the downtown area. Although the

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[1] Cecil Smith, CalTrans, telephone conversation, 27 April 1981.

[2] 2,350 daily work trips X 36% auto/1.2 persons per car/2 = 350 longterm spaces; 1,750 daily non-work trips X 36% auto/1.2 persons per car/2/4 turnovers daily = 65 stort-term spaces.

proposed project would account for 3% of this increase (470 spaces out of 15,000 spaces) in the parking demand, there would be cumulative impacts. It is probable that there would be an increased parking demand south of Harrison Street and beyond. Added vehicle circulation would also result from the increased number of vehicles seeking the limited number parking spaces, increasing street congestion.

This analysis suggests that parking facilities would be directly affected by cumulative growth. Parking impacts could relate to the inconvenience for downtown employees and visitors as they are forced to park further from their destination. A secondary effect would be the increased parking (and traffic) in neighborhoods which are removed from the downtown. Some motorists may seek parking (both curb and off-street) in peripheral areas and ride to Muni to/from the downtown. It is also possible that parking inconvenience could cause some commuters and/or visitors to shift to an alternate mode. Some persons may elect to joint carpools/van-pools or may use public transit.

The project's provision of long-term tenant parking would not be responsive to the area's designation for short-term parking as outlined in the Transportation Element of the City's Comprehensive Plan.

The proposed project would also provide 2 off-street truck-loading spaces with access on Spear Street. The Planning Code (Section 152) requires 2 loading spaces. Studies by the City[1] suggest that the peak demand could be 25% higher (i.e. 2-3 spaces). Revised freight loading requirements (recently endorsed by the Planning Commission[2]) would require 0.1 space per 10,000 gross square feet of office area. The project would require 2.6 spaces according to these revised calculations. The project would not meet this requirement, suggesting that the actual freight loading demand at peak could exceed the 2 spaces proposed. In response to this peak demand the project would include a van space in the basement parking area. During these peak periods delivery vehicle(s) may seek spaces on the street, displacing curb parking or disrupting traffic flow through double-parking.

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[1]Department of City Planning, Pedestrian and Goods Movement Study, September 1980.

[2]Endorsed by San Francisco Planning Commission on January 21, 1982.

5. Pedestrian Impacts

An accepted methodology for describing pedestrian flow quality is contained in Urban Space for Pedestrians by Pushkarev and Zupan.[1] They cite the following characteristics of pedestrian flow, shown in Table 17, below:

TABLE 17

Pedestrian Flow Characteristics

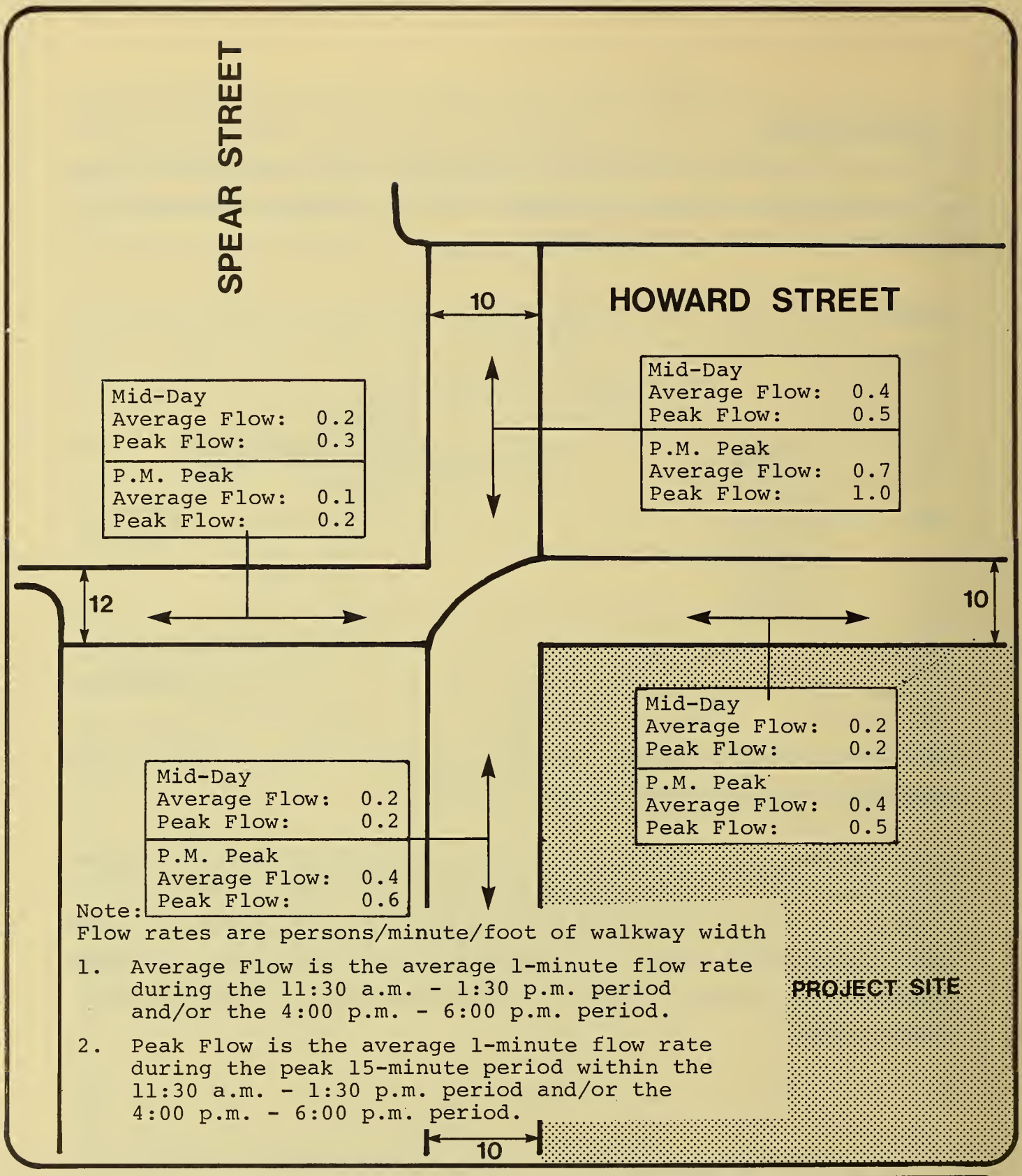
Description	Flow Rate (persons/minute/foot of walkway width
Open	less than 0.5
Unimpeded	0.5 - 2
Impeded	2 - 6
Constrained	6 - 10
Crowded	10 - 14
Congested	14 +

Pedestrian volumes on adjacent sidewalks and crosswalks were counted during both the midday (11:30 a.m. - 1:30 p.m) and evening (4:00 p.m. - 6:00 p.m.) peak periods. The existing physical conditions, average flow rates are shown in Figure 21, page 82. As shown, existing pedestrian flows are open or unimpeded.

With the proposed project all sidewalks or crosswalks bounding the project would continue to experience open or unimpeded flow (Figure 22, page 83). The cited reference also suggests that the "platooning" effect (groups of pedestrians) on pedestrian flows can cause more congested conditions during certain peak periods and that a rate of 4 persons/minute should be added to simulate this platooning. With this platooning condition, flows would remain unimpeded.

With limited parking on-site, nearly all of the proposed project's trips would involve some walking to/from transit, other parking lots, etc. Pedestrian trips have been added to the existing pedestrian volumes on sidewalks and crosswalks adjacent to the project site.

[1] Pushkarev and Zupan, Urban Space for Pedestrian, MIT Press, 1975. Methodology recommended in OER Transportation Guidelines.



Existing Pedestrian Flow Conditions

North

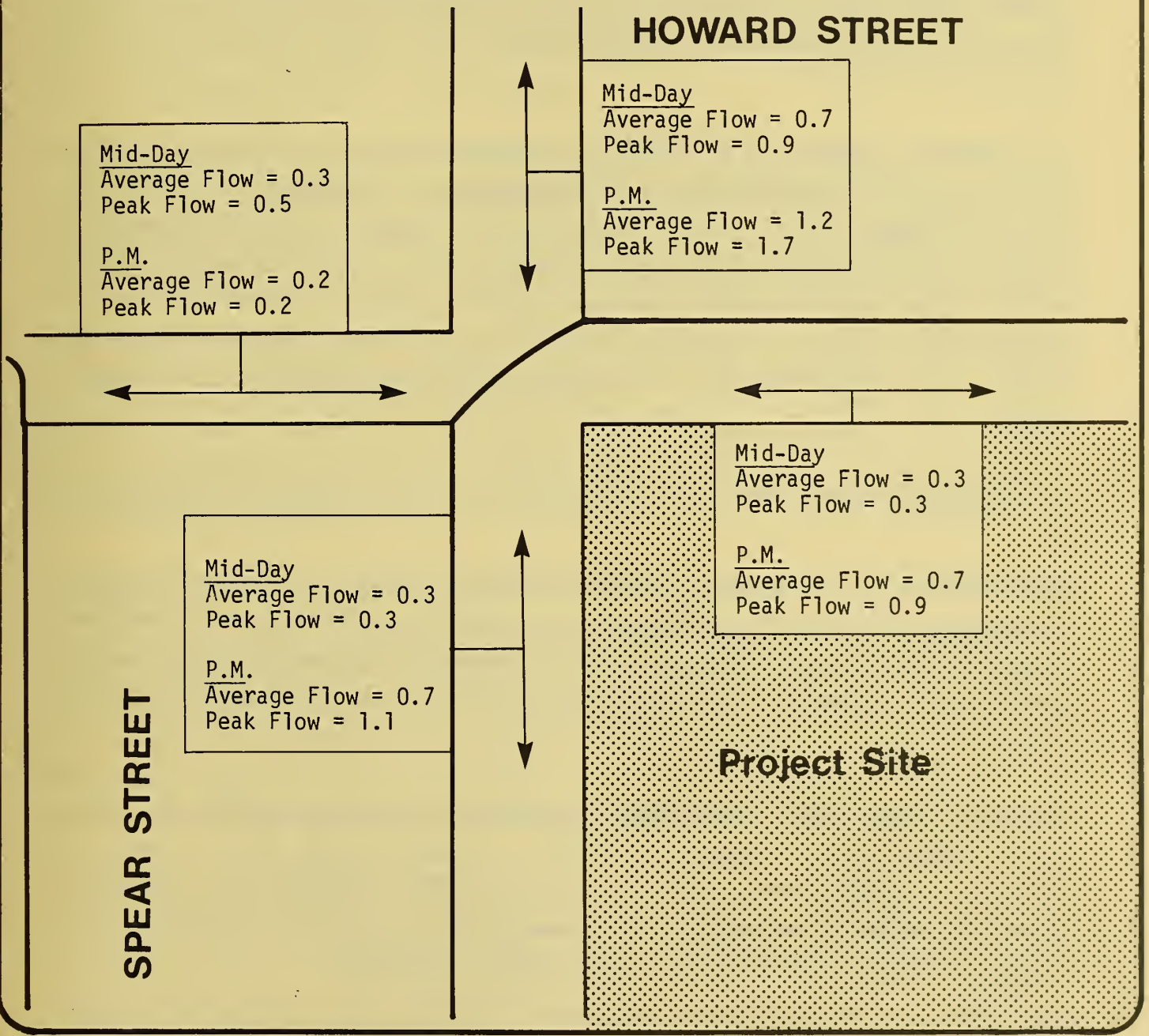
Not to Scale

Source: EIP Corporation
201 SPEAR

Figure No. 21

Note:
Flow rates are persons/minute/foot of walkway width

1. Average Flow is the average 1-minute rate during the 11:30 a.m. - 1:30 p.m. period and/or the 4:00 p.m. - 6:00 p.m. period.
2. Peak Flow is the average 1-minute flow rate during the peak 15-minute period within the 11:30 a.m. - 1:30 p.m. period and/or the 4:00 p.m. - 6:00 p.m. period.



Projected Pedestrian Flows

North
Not to Scale

Source: EIP Corporation
201 SPEAR

Figure No. 22

Based upon travel research conducted by the California Department of Transportation,[1] it is estimated that approximately 30% of the daily trips would occur in the 4:00 p.m. - 6:00 p.m. period and 20% in the 11:30 a.m. - 1:30 p.m. period. Thus, 820 midday pedestrian trips and 1,230 p.m. peak period trips have been added to the existing pedestrian flows; the total projected flows are depicted in Figure 22, page 83. Based upon these projections, the quality of pedestrian flow would remain unchanged from the existing characteristics.

The pedestrian facilities could experience cumulative impacts as a result of other development in the area. A total of 5 office projects have been proposed or approved in the block bounded by Mission, Spear, Howard and Main Streets. The sidewalks/crosswalks adjacent to the proposed 201 Spear project could be impacted by employees and visitors walking to/from parking facilities. Because this travel would be limited by the lack of available parking south of the site, it would be tenuous to project specific pedestrian volumes. It is probable however, that pedestrian flows would degrade to the impeded range.

6. Construction Impacts (Section IV.C., Employment, Housing and Fiscal Impacts, page 53)

Although no specific construction process has been formulated, it is projected that about a 1-1½ year construction period would be required. Based upon the construction employee projections, this project would have a peak construction employee parking demand of approximately 110 spaces.[3] This demand would compete for the limited parking available in the area.

Although the construction traffic volumes would likely not be high in relation to existing traffic, trucks and other construction traffic could disrupt traffic flow. Trucks and equipment could block some portions of the adjacent streets throughout the construction process. In addition, construction activities would likely encroach onto sidewalks, causing a possible reduction in sidewalk widths and pedestrian congestion.

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[1]California Department of Transportation, 10th Progress Report on Trip Ends Generation, San Francisco, July 1975.

[2]San Francisco Department of City Planning, FEIR 315 Howard Street, EE.79.196, certified 21 August 1980.

[3]Assumes 220 peak employees x 50% automobiles.

The project sponsor[1] has indicated that peak truck activity would occur during the excavation and foundation portions of the construction. During excavation about 70 (one-way) daily truck trips would be made to/from the site and this activity would extend for 3-4 weeks. During the concrete placement for the foundation, about 100 daily truck trips would be made to/from the site and this level of activity would occur on 4-5 days. During these operations, truck activity would tend to disrupt traffic flow and curb parking. Specific truck routing has not been established but the project sponsor proposes to use the site's Spear Street frontage for truck deliveries.

The construction activity associated with the approved and proposed projects in the area could have a cumulative effect on Muni service. In addition to the 101 Mission and 315 Howard projects (approved) and the proposed 201 Spear office building, three other office projects are proposed for the block bounded by Mission, Main, Howard and Spear Streets.

The foregoing approved and proposed projects (including 201 Spear) would have a cumulative construction employee parking demand for about 250 spaces. If all of the projects were built concurrently, this demand would concurrently compete for the limited parking available in the project area. Similarly, these projects would generate a total of about 200 daily truck trips.

Although deliveries would probably occur on the side streets (Main and Spear), the additional truck traffic could be disruptive to the numerous Muni lines on Mission Street. If trucks double park, Muni vehicles would be forced to maneuver around these vehicles. The proposed project would not result in the actual closure of traffic lanes. Adjacent to other projects in the area, the parking lanes would probably be taken for use as pedestrian walkways. Without parking lanes, trucks or other vehicles could double park in a traffic lane, further disrupting auto traffic in general and Muni buses in particular.

7. Summary of Transportation Impacts

As outlined in the foregoing sections, the downtown office projects would have significant cumulative impacts on the overall transportation system. Those projects approved through October 1981 would add 30-35% to downtown travel during the p.m. peak hour. An additional 30% increase would result from those office projects proposed through October 1981.

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[1] Clifton Brinkley, Construction Consultant, telephone communication, 15 December 1981.

The freeways, freeway ramps and major streets accessing the freeways would experience substantial increases in traffic congestion. Vehicle queues would increase and peak hour flow conditions would probably extend throughout the 3 - 6 p.m. period.

All of the transit carriers would be at or over capacity. Passenger loads would be particularly heavy on Muni, BART, Golden Gate and SamTrans. Peak hour buses and trains would be crowded with uncomfortable conditions for all passengers. Vehicles would probably be crowded to the extent that buses would pass up waiting passengers and trains would be unable to admit passengers waiting at platforms. The peak hour congestion would be extended to 2-3 hours.

Parking facilities would be directly affected by cumulative growth. Parking impacts would relate to the inconvenience for downtown employees and visitors forced to park farther from their destinations. A secondary effect would be the increased parking and traffic in neighborhoods removed from the downtown area. Some motorists might seek parking (both curb and off-street) in peripheral areas and ride Muni to/from downtown. This parking demand would remove spaces from local residences/businesses. It is also possible that parking inconvenience could cause some commuters and/or visitors to shift to an alternate transportation mode. Some persons might elect to join carpools/van pools or might use public transit.

In summary, the transportation analysis suggests that cumulative downtown development would have major consequences. The magnitude of the impacts would require significant increases in the system capacity and/or changes in travel habits (i.e. van pool usage, work hour changes, etc.).

E. NOISE

1. Compatibility with the Existing Noise Environment

The Transportation Noise Element of the San Francisco Comprehensive Plan contains guidelines for determining the compatibility of various land uses with outdoor noise environments. Office buildings are considered to be satisfactory with no special noise insulation requirements in an outdoor environment of up to an Ldn of 70 dB. In noise environments of up to an Ldn of 75 dB, new construction or development should be undertaken only after detailed analysis of the noise reduction requirements is made and needed noise insulation features included in design. Above an Ldn of 75 dB, new construction or development should generally be discouraged. If new construction or

development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in design.

The proposed project would have fixed windows and would be mechanically ventilated. Fixed windows would reduce exterior noise by about 30 dBA. As the maximum noise exposure of the building would be on the upper floors overlooking Highway 480 (an exterior Ldn of approximately 73 dB), it is expected that inside the nearest offices, the Ldn would be approximately 45 dBA. Instantaneous maximum sound levels of up to 50 dBA would be expected as trucks pass on the highway. Offices below the highway level or facing away from the highway on Spear and Howard Streets are exposed to an exterior Ldn of about 66 dB. Interior noise levels in these offices would be an Ldn of approximately 36 dB. Instantaneous maximum noise levels in these offices may reach 55 dBA during truck passbys as they are closer to the streets than the upper floors are to the highway.

An Ldn of 45 dBA is considered the upper limit of acceptability for traffic noise in a private or semiprivate office or small conference room where good listening conditions are desired. The average sound levels in the noisiest offices would therefore be compatible with the proposed uses. The projected instantaneous maximum levels of up to 55 dBA could interrupt a speaker talking in a normal tone of voice in a small conference room.

2. Noise Impact on Adjacent Land Uses

Post-construction operation of the Spear and Howard Office Building could affect the existing acoustic environment in the area in 2 ways: by generating additional traffic in the vicinity, contributing to an increase in overall traffic noise levels; and by adding to the noise environment the sounds of mechanical equipment associated with the building.

Traffic generated by the building during daytime hours would cause noise levels to increase by less than 1 dBA on any of the adjacent streets. A 1-dBA increase in environmental noise is undetectable to humans except in a laboratory situation.

The mechanical equipment to be used with the building has not been selected; however, this equipment can be designed so that it would not impact the existing acoustic environment. The amount of nose that can be emitted by this equipment, however, is

regulated by San Francisco's Noise Ordinance (Part II, Chapter VII, San Francisco Municipal Code, Section 2909, "Fixed Source Noise Levels"). The noise ordinance requires that noise from the mechanical equipment at the proposed building not exceed 60 dBA at the property line of the property affected by noise emission. This level would be at or below the existing background noise level in the vicinity of the site and no increase in noise levels due to mechanical equipment would be expected.

3. Construction Noise Impacts

Construction noise in San Francisco is also regulated by the noise ordinance. The ordinance requires that all powered construction equipment except impact tools and equipment not emit more than 80 dBA when measured at a distance of 100 feet. Impact tools and equipment including pavement breakers, jackhammers and pile drivers must have their intake and exhaust muffled to the satisfaction of the director of public works. The ordinance further requires a special permit for construction after 8:00 p.m. and before 7:00 a.m.

Construction of the proposed project would take place in 3 phases: excavation, foundation construction, and building and erection. Construction noise levels would fluctuate measurably depending upon the following variables: the phase of construction, the duration, the type or types of equipment used during each phase, the noise emitted during its noisy mode of any particular item or items of equipment in use, the proportion of the day during which the equipment would be operated in this noisy mode, the mobility of the equipment (e.g. the noise source might be a stationary air compressor or a self-propelled backhoe), the distance between the noise source and the receptor and the noise propagation characteristics of path between the noise source and the receptor (e.g. shielding by barrier or an intervening building would result in a reduced noise level at the receptor). The worst-case noise impacts associated with the various phases of construction have been estimated for this study.

During excavation, bulldozers, graders, haul trucks and front end loaders would be expected on the project site. These pieces of equipment generate from 64-79 dBA at 100 feet. During foundation construction, the major noise source would be pile driving, during which noise levels up to approximately 105 dBA at 50 feet can be expected. After the pile driving phase, concrete pumpers, power saws, cranes, air compressors, engine generators and impact torque wrenches would be the major noise sources. These pieces of equipment emit from 70 to 95 dBA at 50 feet. The impact wrenches which would be used

intermittently during the framing of the building emit the highest noise levels during this phase, of 95 dBA at 50 feet. These levels have been measured at construction projects in downtown San Francisco.

The occupied land uses nearest the proposed site are office buildings opposite the site on Spear Street and the Rincon Annex Post Office opposite the site on Howard Street. These buildings are located greater than 100 feet from the closest point of construction. All the buildings have fixed windows providing a reduction in exterior noise levels of about 30 dBA. During pile driving, the noisiest construction operation, noise levels outside these nearest office buildings would reach as high as 99 dBA. Maximum noise levels during pile driving inside the buildings would be expected to reach about 69 dBA. The noise from pile driving would be expected to annoy and distract office workers and conversations would have to take place at a higher vocal level, and the noise could interfere with telephone use. Noise levels at the Rincon Annex would be somewhat lower due to the shielding provided by the existing parking garage.

During the use of impact wrenches (the next noisiest construction activity), noise levels inside the nearest buildings would be expected to reach about 60 dBA. A level of 60 dBA could interfere with conversation and would be disruptive, although would not interfere with telephone use.

During the remainder of construction, interior noise levels would be expected to be below 50 dBA. At this noise level, construction noise would be audible but would not be expected to interfere with the use of the office space.

Five other projects in the vicinity of the 201 Spear project have been approved or are in the approval process. Four of these projects are on the block bounded by Mission, Main, Spear and Howard Streets. The other project would be the 315 Howard project located at the intersection of Howard and Beale Streets. All of these projects are similar in type and would involve impacts on the closest sensitive receptors, generally office buildings, of about the same order of magnitude.

While it is possible that all of these projects could be under construction at once, it is improbable that each project would be in the same stage of construction at the same

time; for example, pile driving would probably not be taking place on all five sites simultaneously. The cumulative effect of the construction of all these projects on a given existing building would be that the high construction noise levels would be experienced on a more continuous basis until the projects were completed. The worst case instantaneous noise levels would not be higher than predicted for the individual buildings. If the projects were staggered, the construction noise impacts would be spread out over a longer period of time. The actual cumulative noise impacts on a given receptor would depend upon the phasing of each project and the location of the receptor in relation to each of the other projects.

F. AIR QUALITY AND CLIMATE

1. Air Quality

Construction activities would generate pollutants in the vicinity of the project. Trucks and equipment would release exhausts; earthmoving and grading would generate dust and suspended particulates. Available emission factors[1] for fugitive dust were developed for shopping center and housing construction in suburban desert areas and have little applicability to downtown urban construction.

Direct atmospheric emissions of primarily carbon monoxide from the project would be from combustion of natural gas for water and space heating. Natural gas is a relatively clean-burning fuel; therefore, no visible fumes would occur. Exhaust gases would be emitted at rooftop level and would be diluted to concentrations below the ambient air quality standards before reaching ground level.

The project would act as an indirect source of atmospheric emissions by generating automobile traffic. On the local scale, carbon monoxide is the most important pollutant emitted by automobiles.

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[1] U.S. Environmental Protection Agency, Compilation of Air Pollution Emission Factors, 2 April 1977.

Projected carbon monoxide concentrations for existing conditions near the site, with the project and other anticipated projects were calculated using traffic volumes presented in Section IV.D., page 71.[1] Results for worst-case meteorological conditions are summarized in Table 18, page 92. These concentrations represent the exposure a person would experience at curbside. Carbon monoxide levels would drop off rapidly with distance from curbside.

Table 18 shows that existing and future predicted carbon monoxide levels are below the federal standards. Levels would increase about 10% between 1981 and 1985 with construction of the project and other approved projects. Expected improvements in vehicle emissions controls would offset traffic increases so that carbon monoxide levels would increase only 10% even though traffic volumes would increase by 30%.

Similar effects would occur for lead concentrations. Prediction of roadside concentrations is not possible; however, lead levels will continue to decrease, despite project traffic, as leaded gasoline is phased out.

The regional impact of the project would be due to the increase in vehicle miles traveled (VMT) associated with the project. Based upon estimated project trip generation and destination (see IV.D., page 66), the daily regional increase of VMT is estimated at 19,000. Using composite emission factors supplied by the Bay Area Air Quality Management District and assuming an average trip speed of 25 mph, total regional emissions from the project traffic have been estimated in Table 19, page 92.[2]

The increase in regional emissions would result in degradation of regional air quality. Of particular importance are increases in hydrocarbons and oxides of nitrogen which result in

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[1]Bay Area Air Quality Management District, Guidelines for the Air Quality Impact Assessment of Projects, 1975, Revised July 1981.

[2]Ibid.

TABLE 18

Curbside Carbon Monoxide Concentrations[1]
Under Worst-Case Conditions (in parts per million)

Intersection	(Existing) 1981 1-hour	(Existing) 1981 8-hour	With Other Development[2] (1985) 1-hour	With Other Development[2] (1985) 8-hour	Project and other Development (1985) 1-hour	Project and other Development (1985) 8-hour
Mission/Spear	10.5	3.5	11.3	3.7	11.3	3.7
Mission/Main	16.0	4.5	17.3	4.8	17.3	4.8
Mission/Beale	12.9	3.9	13.9	4.1	13.9	4.1
Howard/Main	11.7	3.7	12.6	3.9	12.6	3.9

[1]Federal standards are 35.0 ppm for the 1-hour averaging period and 9.0 ppm for the 8-hour averaging period.

[2]Other proposed projects are listed in IV.D., Transportation, Page 67.

TABLE 19

Regional Automobile Emissions (tons/day)

	1985 Project Emissions	1985 Emissions From Project and Other Proposed Projects[1,2]	1983 Regional Emissions
Carbon Monoxide	0.50	7.0	1,500
Hydrocarbons	0.04	0.6	950
Oxides of Nitrogen	0.05	0.7	800

[1]Bay Area Air Quality Management District, Guidelines for Air Quality Impact Analysis of Projects, June 1975, revised July, 1981.

[2]Other proposed projects are shown in IV.D.,Transportation, Page 67.

the formation of photochemical oxidants. Studies of future air quality[1] indicate that photochemical ozone would be a persistent problem, and that reductions in hydrocarbon and oxides of nitrogen emissions would be necessary to attain the federal standard for ozone in the Bay Area. The proposed project's emissions would represent, at most, an increase of 0.006% in regional emissions of ozone precursors.[2] Photochemical oxidant modeling conducted for the proposed Yerba Buena Center[3] Redevelopment Project showed that emissions from that project would result in no measurable change in Bay Area oxidant concentrations. The regional emissions for the 201 Spear project would be less than 5% of those for the Yerba Buena project, therefore, no measurable effect on regional oxidant concentrations would be anticipated. Cumulative development in San Francisco and the Bay Area could, however, have a measurable effect on regional air quality.

Indoor air within the proposed building would be affected by cigarette smoking and off-gases generated by some building materials. Cigarette smoking generates particulates and carbon monoxide, while building materials are known to generate radon, a radioactive gas, and organic gases such as formaldehyde. The human exposure to these pollutants is primarily determined by the rate of ventilation.

2. Climate

Shadows cast by the proposed structure have been analyzed for the first day of each season for 3 times of the day. (See figure 23, page 94, for 8 a.m. shadows.) The proposed building shades the Howard Street/Spear Street intersection in summer, spring and fall. In winter the sun is very low above the horizon, and all pedestrian areas near the site are already shadowed. The proposed plaza at the south end of the project is shaded in all seasons at 8 a.m. The plaza would have sun, however, during the late morning hours in spring, summer, and fall.

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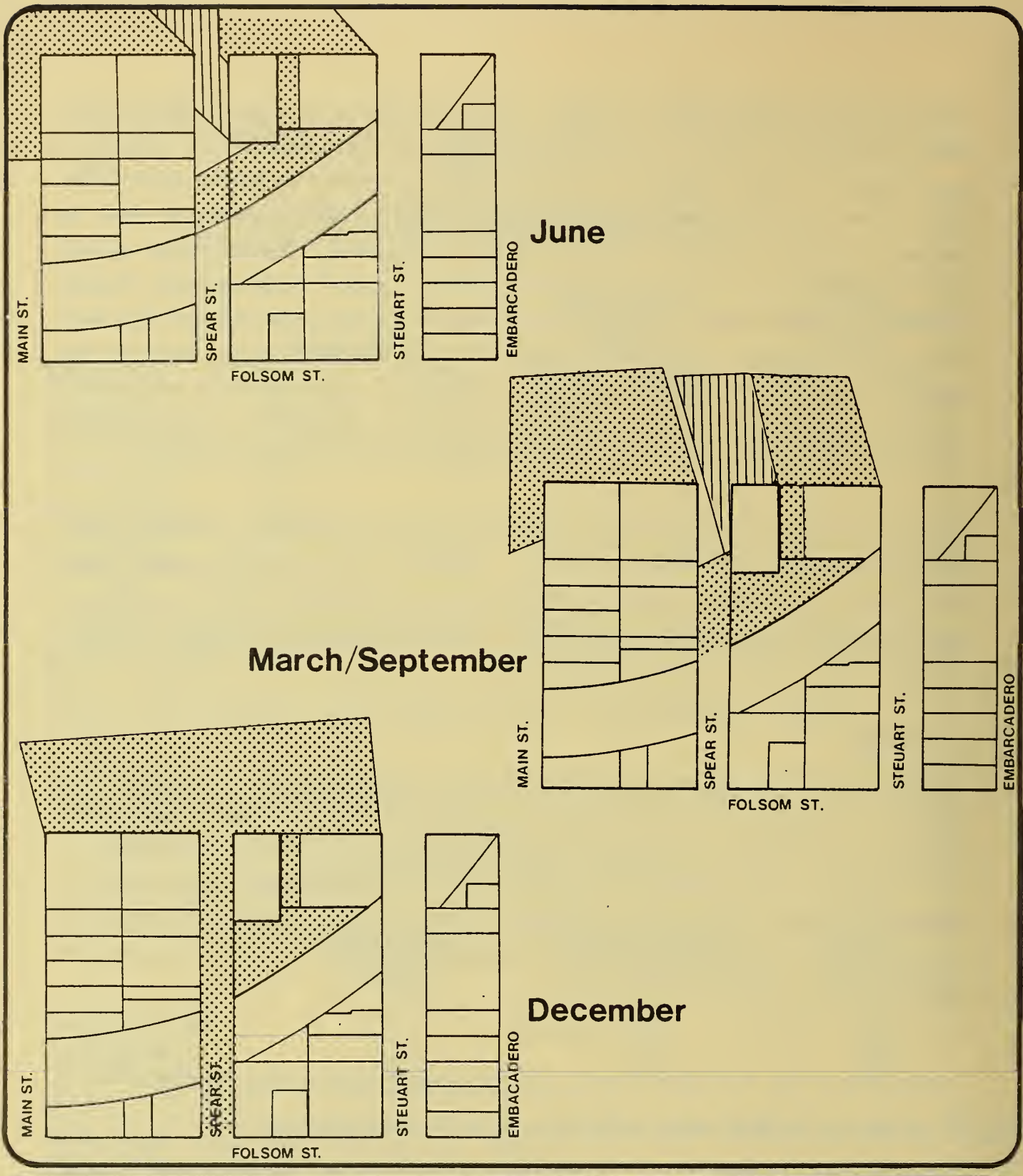
[1]Association of Bay Area Governments, 1979 Bay Area Air Quality Plan, January 1979.

[2]Calculated by dividing project emissions by total Bay Area emissions.

[3]San Francisco Department of City Planning and San Francisco Redevelopment Agency, Final EIR, Yerba Buena Center, EE 77.220, certified 25 April 1978, p. 382.



Shadow Patterns - 8:00 am

Existing Shadows

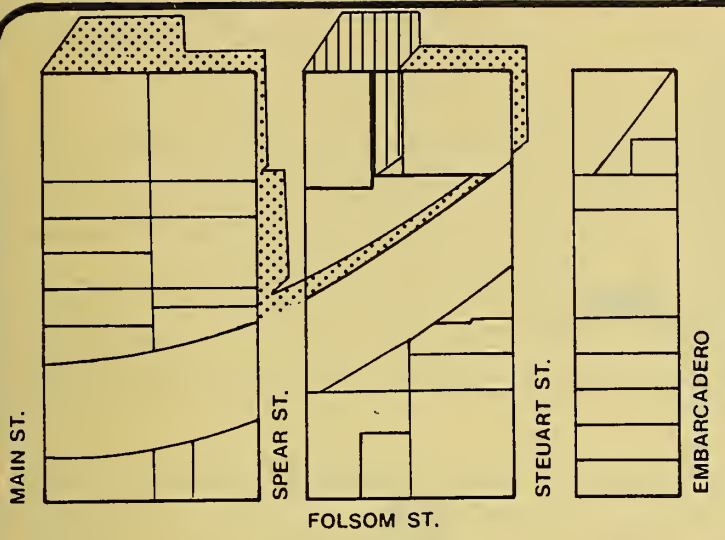
Shadows added by Project

North

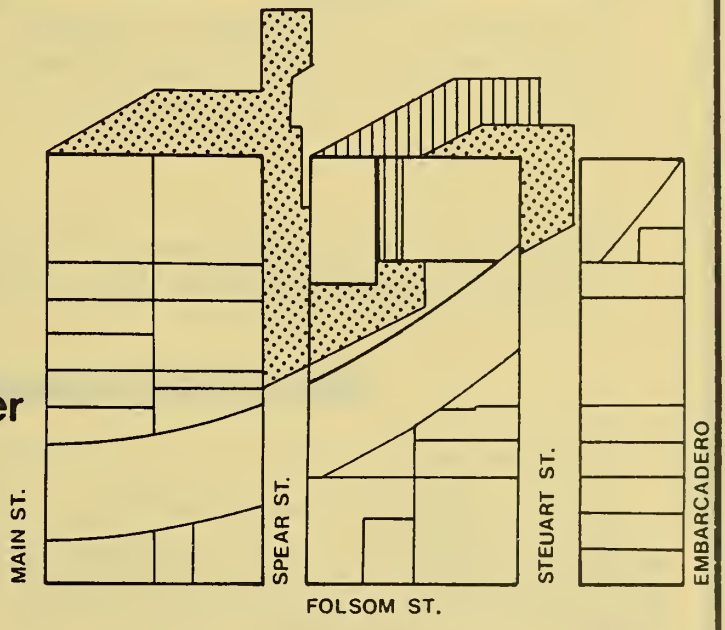
0 50 100 200

Scale Feet

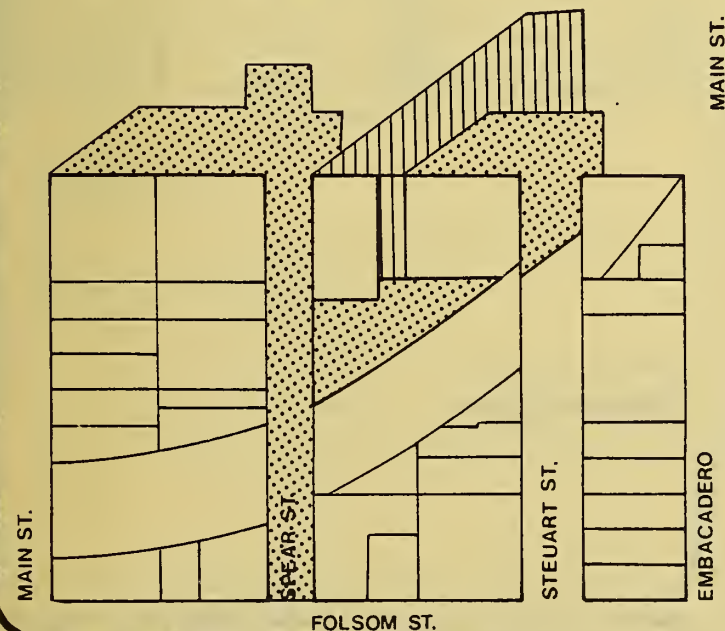
Figure No. 23



June



March/September



December

Shadow Patterns~1:00 pm

Existing Shadows

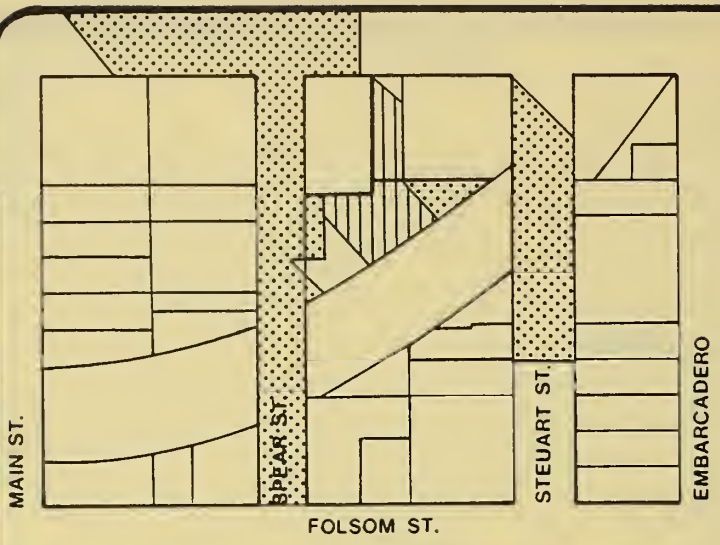
Shadows added by Project

North

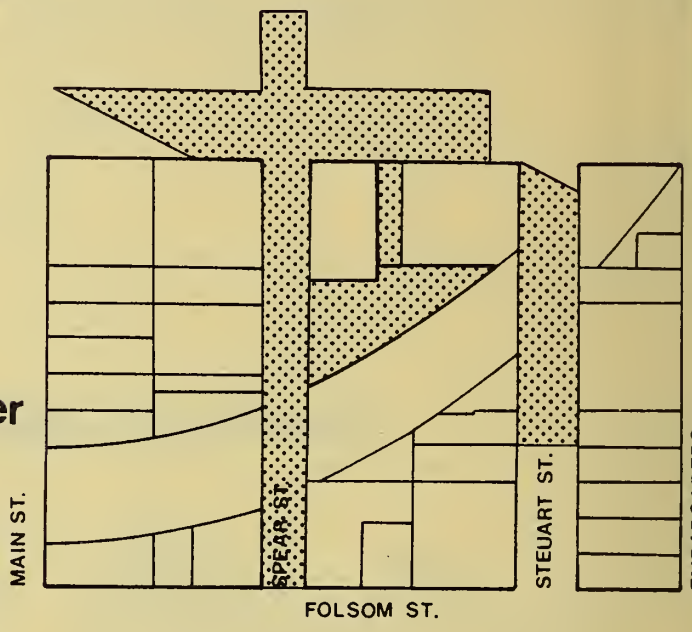
0 50 100 200

Scale Feet

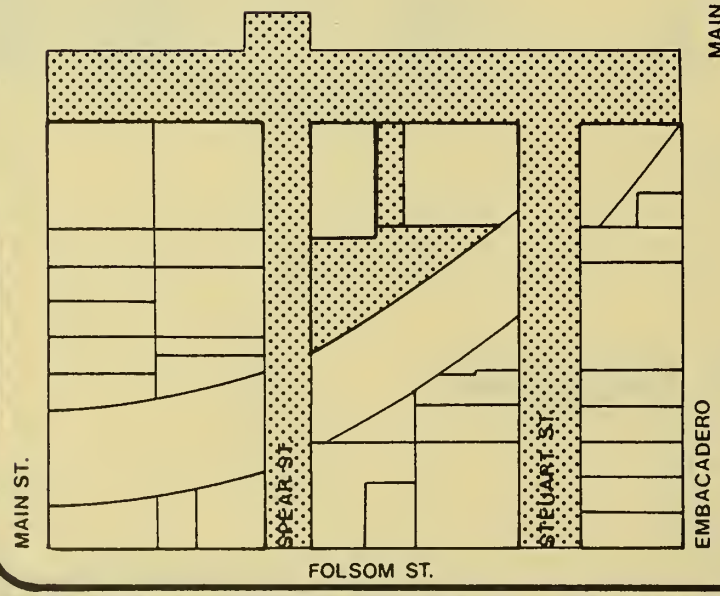
Figure No. 24



June



March/September



December

Shadow Patterns~4:00pm

Existing Shadows

Shadows added by Project

North

0 50 100 200

Scale Feet

Figure No. 25

The project would shade a portion of Howard Street at 1 p.m. (Figure 24, page 95). In fall and spring, the building's shadow would extend east along Howard Street to the northwest corner of the Howard/Steuart intersection. In winter, the building's shadow would extend across the Rincon Annex parking area on the block across Howard Street from the site, and would reach to the east side of Steuart Street north of Howard Street. The proposed plaza would be shaded in all seasons except summer.

At 4 p.m. all pedestrian areas near the site are shaded except in summer (Figure 25, page 96). The proposed project would shade the pedestrian walkway on the northeast side of the building and most of the project site. The proposed plaza would be mostly in shade.

G. ENERGY

Implementation of the proposed project would lead to energy consumption from 4 sources: construction, operation and maintenance, project generated traffic, and project removal.

1. Construction

Based on a construction cost of $18 million (1981 dollars), project construction would consume 41 billion BTU[1] of energy in the form of gasoline, diesel fuel, electricity and lubricants.[2] This is the equivalent of 7,600 barrels of oil.[3]

2. Operation

Gas and electrical consumption estimates for the proposed project are based on the following assumptions:

- All exterior walls and the roofs would be insulated.
- tinted glass would be used in windows.
- A lighting load of 2.3 watts per square foot.

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[1]BTU = British Thermal Unit = the quantity of heat required to raise the temperature of 1 pound of water 1°F.

[2]Tetra Tech, Incorporated, Part 1. Analytical Approach, Energy Use in the Contract Construction Industry. Appendix A, Study Methodology, Springfield, Virgina, NTIS, 18 February 1975, page 3.

[3]1 barrel = 42 gallons = 5.4 million BTU equivalent.

- drapes on the south side of the structure would be drawn on warm, sunny days.
- the structure would incorporate a cooling system, operated by electricity and with an energy efficiency ratio of 7.5.[1]

Electricity. The project's estimated average monthly electrical consumption would be 325,000 kilowatt hours (KWH), equivalent to 1.3 KWH per square foot of floor area.[2] This figure may be compared to predicted usage rates of 1.9, 2.5 and 1.2 KWH per square foot according to the Environmental Impact Reports of the recently approved projects at 444 Market, 595 Market, and 505 Sansome, respectively. Peak demand is projected to occur on September afternoons due to increased demand for air conditioning; this is a period of high system-wide demand although PG&E's system-wide peak occurs on August weekdays. Daily and annual load distribution curves are shown in Figure 26, page 99. Total connected load would be 2,300 KW.

Natural Gas. Estimated average daily natural gas consumption for the proposed project would be 11 BTU per square foot of floor area[3] This figure may be compared to estimated consumption of rates of 120, 300, and 360 BTU per square foot for 444 Market, 595 Market, and 505 Sansome respectively. The magnitude of the estimated peak natural gas demand for the project would be 81 therms per day. Daily and annual load distribution curves for natural gas are given in Figure 27, page 100. Peak values are predicted to occur on January mornings, which coincides with PG & E's system peak.

3. Transportation

Based on an estimated increase in regional vehicle miles traveled (VMT) resulting from project-generated traffic, the annual auto transportation energy consumption would be 80,000 gallons of gasoline, equal to 10 billion BTU or 1,800 barrels of oil. This is about 16% of the structure's estimated annual operational energy use. Energy consumed for bus, rail and ferry transit would be in addition to this quantity of energy.

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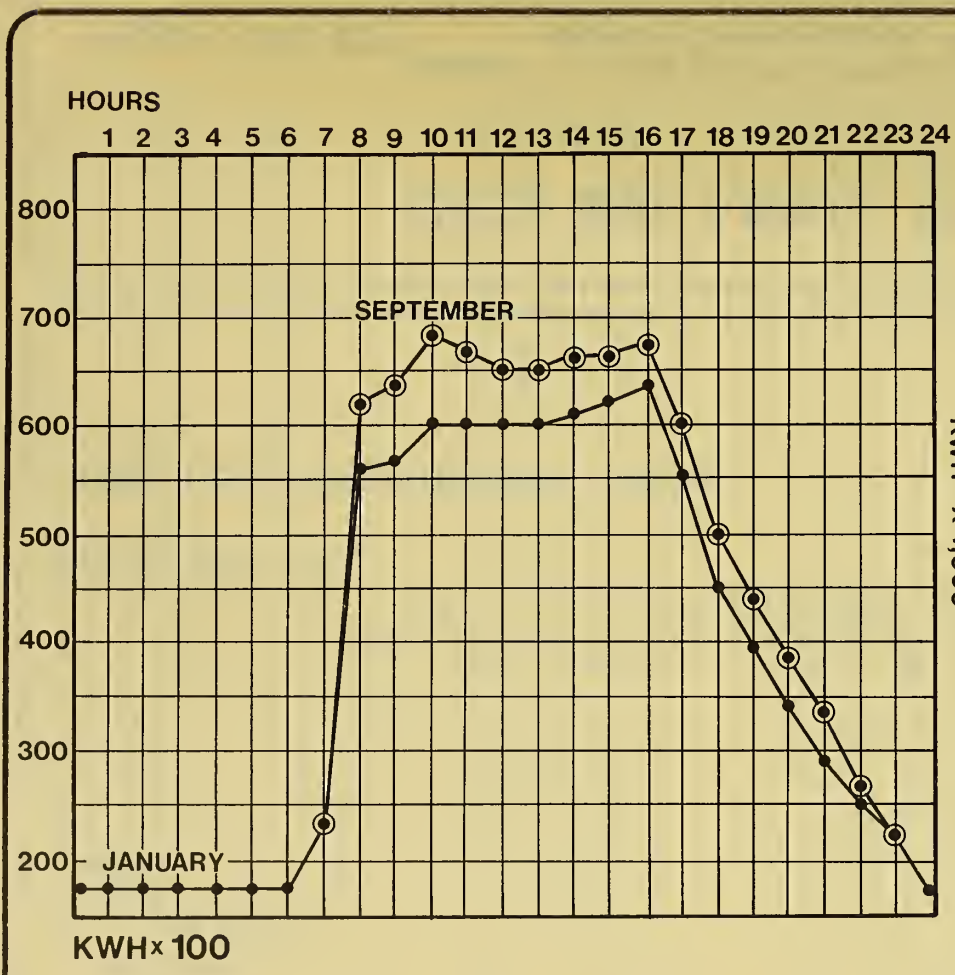
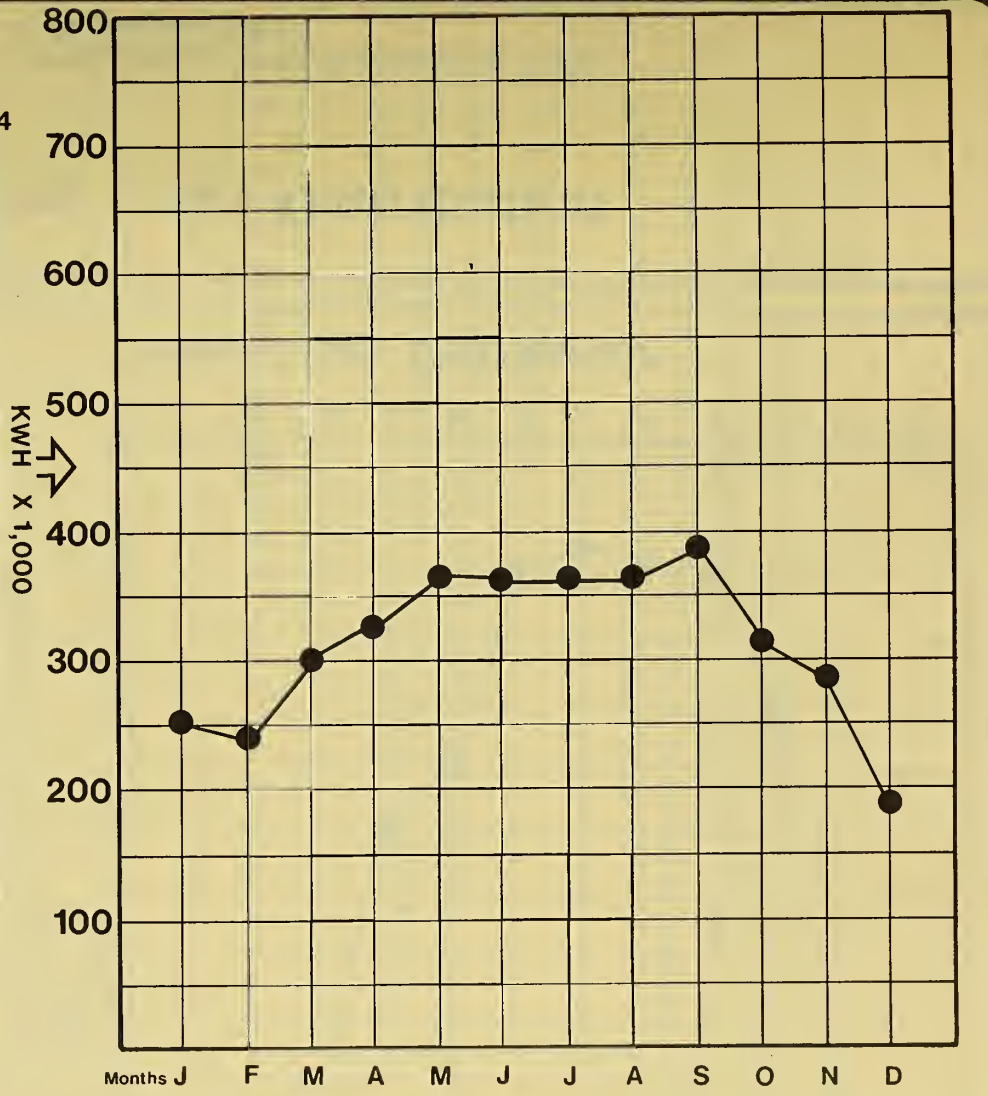
[1]State of California, Energy Resources and Development Commission Conservation Division, Energy Conservation in New Non-Residential Buildings, Sacramento, October 1977.

[2]Thomas K. Barfield, Engineer, EDC Associates Inc., written communication, 11 December 1981.

[3]L.L. Roy Gifford, Director, Engineering, Vann Engineering Corp., written communication, 11 December 1981.



Electrical Load Distribution Curve

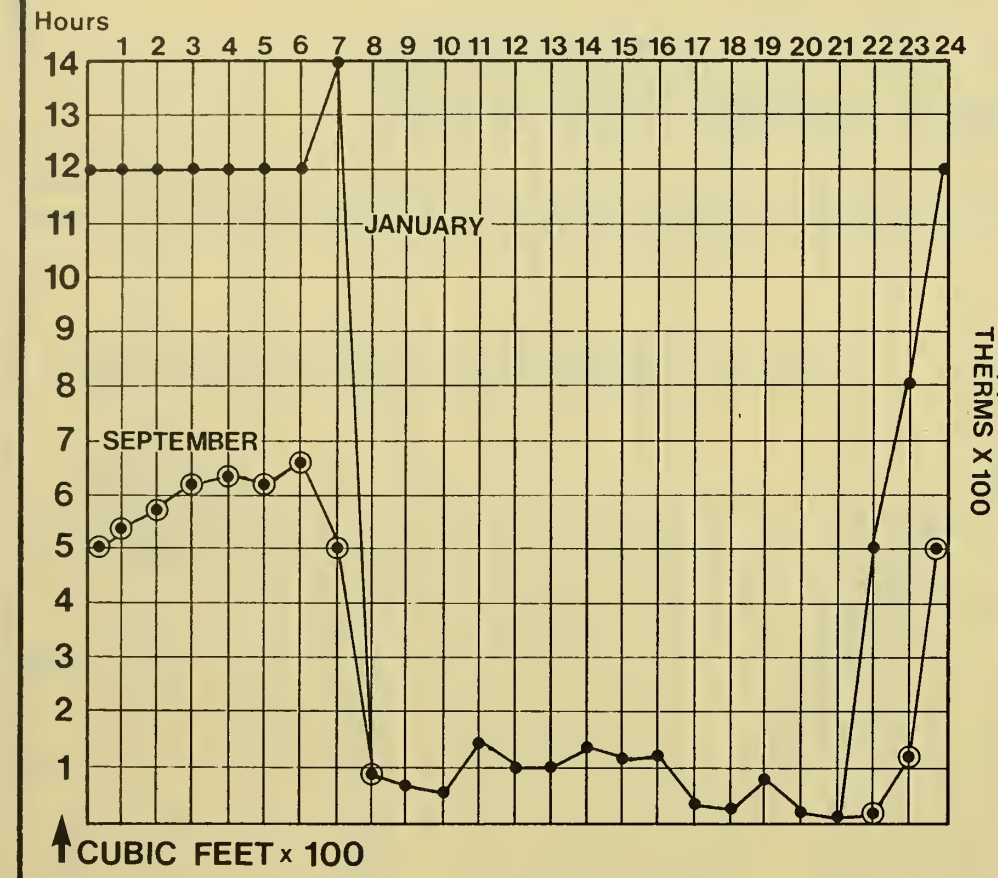


Annual Electrical Distribution Curve

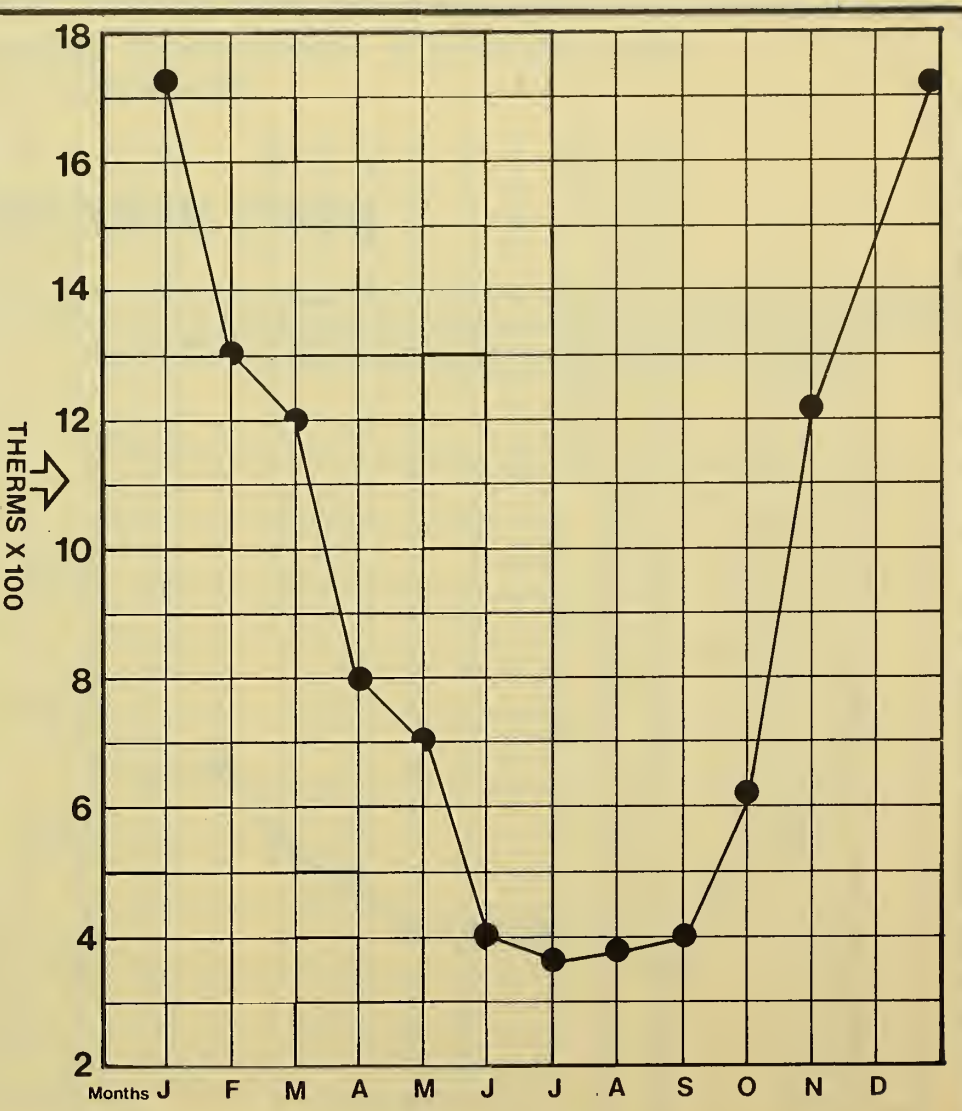
Daily and Annual Electrical Load Distribution Curves

Source: L.L. Roy Gifford, Director, Engineering, Vann Engineering Corp. Written Communication 11 December 1981

Figure No. 26



Gas Load Distribution Curve



Annual Gas Distribution

Daily and Annual Gas Load Distribution

Figure No. 27

Source: L.L. Roy Gifford, Director, Engineering, Vann Engineering Corp. Written Communication 11 December 1981

4. Removal

It is difficult to predict the energy efficiency of demolition equipment and techniques of the distant future, which are likely to more more efficient. Modern demolition methods are approximately the same in their energy consumption methods. Thus, an upper limit on project removal cost can be set at 41 billion BTU.

5. Lifetime Energy Costs.

Assuming a building lifetime of 50 years, and excluding transportation energy use, the estimated lifetime energy costs would be about 3.2 trillion BTU. This is the equivalent of 576,000 barrels of oil.

H. GEOLOGY AND SEISMICITY

1. Geology

Construction on Bay Muds requires special engineering considerations because of their mechanical properties. The capability of Bay Muds to support loads such as office buildings depends on the speed of loading as well as total weight of the load.[1] If loading is applied too rapidly, or is too great, excessive water pressure develops within these highly impermeable sediments causing a loss of sheer strength and consequent soil failure. When the mud shifts, the load settles or lurches. If plastic flow occurs, the mud bulges around the load as the load sinks.

Since the Bay Mud under the proposed project site has stabilized with respect to the existing fill, any future loading would come from new structures placed on the site. Even under ideal conditions, approximately 30 years would be required for the muds to restabilize.[2] The impacts of building on unstabilized mud may be circumvented at this site by setting piles into bedrock to support the proposed structure.[3]

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[1]Frank L. Rollo, Civil Engineer, Harding-Lawson Associates, telephone conversation, 17 March 1981.

[2]Rollo, Frank L., Civil Engineer, Harding-Lawson Associates, Letter to Clifton Brinkley, Construction Manager, One Market Plaza, 3 October 1980, p. 2.

[3]Rollo, Frank L., Civil Engineer - 18126 for Harding-Lawson Associates, letter to Mr. Clifton Brinkley, Construction Manager, One Market Plaza, 3 October 1980.

The ground-water table at the proposed project site is stable at approximately Elevation -10 feet SFD in artificial fill.[1] Inclusion of one level of subsurface parking would necessitate excavation to Elevation -20 SFD, and an additional 10 feet of excavation beneath the elevator shaft. The open excavation would be drained during construction by a site dewatering system. This system would consist of a number of on-site wells which are occasionally pumped out to lower the water table beneath the site to a level below the lowest point of excavation.[2] If necessary sheet piling (or additional shoring systems) would be used to isolate the excavation from the areal ground-water regimen.[3] This hydrologic isolation would prevent loss of soil support from uncontrolled seepage beneath nearby structures. Since intermediate depth wells would be used, reaching a few feet below the base of the site, there would be not general lowering of the surrounding ground-water table or danger of settlement to nearby structures.[4] The closest structure to the site is a parking garage which is supported on bedrock founded piles and would, therefore not be affected by any surface settling.

2. Seismicity

The site of the proposed project would suffer at least "very strong" groundshaking if subjected to an earthquake of Richter magnitude 6 or greater occurring along the San Andreas or Hayward Faults.[5] Major on-site impacts related to such a seismic event within the anticipated useful lifetime of the proposed structure (at least 50 years) include lateral spreading, lurching and liquefaction. Flooding by tsunami or seiche is also a potential hazard.

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[1]Lee and Praszker, "Bay Mud Developments and Related Structural Foundations," Geologic and Engineering Aspects of San Francisco Bay Fill, California Division of Mines and Geology, Special Report 97, San Francisco, 1969, page 45.

[2]Legget, Robert F., Geology and Engineering, 2nd ed., McGraw-Hill, San Francisco, 1962, page 358.

[3]Clifton Brinkely, Construction Manager, One Market Plaza, telephone conversation, 11 December 1981.

[4]Clifton Brinkley, Construction Manager, One Market Plaza, telephone conversation, 11 December 1981.

[5]Borcherdt, R.D., et al., "Response of Local Geological Units to Groundshaking," Studies for Seismic Zonation of the San Francisco Bay Region, U.S. Geological Survey Prof. Paper 941-A, 1975, page A62.

Estimates of the intensity of future groundshaking in the vicinity of the proposed project are based on a seismic event similar to that of the 1906 San Francisco earthquake.[1] For planning purposes it is reasonable to assume a 59 to 205 year return period for this type of earthquake.[2] During such an event "violent" groundshaking is estimated because the site is directly underlain by artificial fill and Bay Mud, both of which are more susceptible to shaking than the deeper bedrock. In this situation serious shaking of a well-constructed building could occur and various types of ground failure would be expected.

The structure would be designed to meet the seismic design standards of the current San Francisco Building Code, which is based on the seismic standards of the Structural Engineers Association of California (SEAOC). SEAOC design standards relate structural design to the maximum probable earthquake in the region, an 8.3 Richter magnitude event along the San Andreas Fault. The elasticity of the structure would be designed according to SEAOC recommended maximum allowable sway.

To reduce direct hazard from groundshaking, nonstructural elements such as hanging light fixtures, hung ceilings, wall partitions, bookcases and mechanical equipment should be firmly attached to prevent their falling during an earthquake, as required by the San Francisco Building Code.

Lateral spreading[3] is a limited displacement, liquefaction-associated ground failure which can occur in fine-grained, cohesive materials, such as Bay Mud, during groundshaking. Spreading can cause rapid or gradual loss of strength in foundation soils resulting in the settlement or breakup of supported structures. The seriousness of this reaction would be

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[1] URS/John A. Blume and Associates, San Francisco Seismic Safety Investigation, San Francisco, CA, June 1974, page 14 and Figure 3.

[2] Shedlock, K.M. et al., Earthquake Recurrence in the San Francisco Bay Region, From Fault Slip and Seismic Movement, U.S. Geological Survey Open File Report 80-999, Menlo Park, California, 1980, p. 10.

[3] Lateral spreading: horizontal movements in a fractured mass of rock or soil, which result from liquifaction or plastic flow of subjacent material. American Geological Institute, Glossary of Geology, 2nd ed., Washington, D.C., 1980.

increased under the heavier load of a large, unstabilized structure. Lateral spreading in the older, more consolidated Bay Mud is less severe than in the younger, less consolidated mud which underlies the proposed project site.[1] Any type of foundation set on, or into (but not completely through), the Younger Bay Mud would be subject to displacement, damage or destruction during lateral spreading. The proposed structure would be supported on bedrock founded piles and would not be subject to loss of support if the Younger Bay Mud were to spread.

Lurching is surface cracking due to horizontal vibration such as would be caused by groundshaking in relatively stiff artificial fill overlying Bay Mud. Because the fill would be essentially rigid compared to the underlying elastic mud, a large, amplified ground wave could crack or shatter the fill by causing the mud to suddenly bulge and subside in repetitive cycles. Lurching is most severe in uncontrolled fills. The likelihood of lurching decreases if the mud has reached a state of stabilization beneath the fill as it presently has on the proposed project site. Rapid or excessive loading of the site would make it more susceptible to lurching during a very strong or violent groundshaking. Lurching fill would not cause the structure to settle or tilt since the fill would not be part of the support system for the building.

Liquefaction[2] can be caused by groundshaking in saturated, loose to moderately dense sands of native soil or artificial fill. Large structures supported by these quicksands would tilt or sink during soil liquefaction. Sand seams within or beneath the Bay Mud could liquefy during strong groundshaking. Only minor soil settlement would be likely to occur since the potentially liquefiable layer is not on a surface which would permit serious

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[1] Goldman, H.B., "Geology of San Francisco Bay," Geologic and Engineering Aspects of San Francisco Bay Fill, California Division of Mines and Geology, Special Report 97, San Francisco, 1969, page 22.

[2] Liquefaction: Earthquake-induced transformation of a stable granular material, such as sand, into a fluidlike state, similar to quicksand. Office of Environmental Review, "Standard Definitions," San Francisco, CA, 15 November 1979.

sliding.[1] Tilting or sinking of the proposed building would not occur during liquefaction settling since the structure would not depend on the fill or subjacent sand seams for support.

Tsunamis,[2] or great sea waves, can be generated by undersea earthquake of Richter magnitude greater than 6.5 and focal depth of less than 32.[3] Tsunami effects on the California coast are usually manifest in the form of rapidly rising and falling tides rather than a single huge sea wave.[4] Consequently, the site of the proposed project would be in greater danger from flooding than from impact force of a great wave.

Seiches are periodic oscillations in lakes or bays caused by a disruption of their normal boundaries.[5] Undersea earthquakes, tsunamis or major landslides into San Francisco Bay could produce a seiche effect in the Bay. As with tsunamis, the greater danger at the project site would be flooding rather than impact force.

The maximum projected runups (rise in water level) at the project site are 5.5 feet for the 100-year flood and 9.7 feet for the 500-year flood.[6] If these occurred during high tide each would be commensurately higher. At the site of the proposed project, a worst-case situation would result in approximately 4 feet of flooding during the 500-year flood.

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[1]Seed, H.B., "Seismic Problems in the Use of Fills in San Francisco Bay, "Geologic and Engineering Aspects of San Francisco Bay Fill, California Division of Mines and Geology, Special Report 97, San Francisco, 1969, page 94.

[2]Tsunamis: huge ocean waves generated by earthquakes, undersea landslides or volcanoes; upon reaching the shallow water of coastal areas, the waves greatly increase in height and may cause localized floading.

[3]Pierzinski, Diane, "Tsunamis," California Geology, Sacramento, CA, March 1981, pages 58 and 59.

[4]Ibid.

[5]American Geological Institute, Glossary of Geology, 2nd ed., Washington, D.C., 1980.

[6]Garcia, A. and J. Houston, Type 16 Flood Insurance Study, U.S. Army Corps of Engineers, Technical Report H.-75-17, Washington D.C., November 1975, Figure 55.

I. HISTORICAL AND CULTURAL RESOURCES

According to a reference document on the San Francisco Waterfront[1] early fill in the area of Yerba Buena Cove during the post-Gold Rush period has been found to be historically valuable because of the sunken hulks contained in the fill. Gold Rush Vessels Beached, Scuttled, or Broken Up,[2] a map prepared in 1964 by San Francisco Maritime Museum staff identifies the location of known buried hulks. The map shows that most buried hulks are located in the vicinity of Telegraph Hill. The remains of the storeship "Trescott" is shown under the intersection of Mission and Main Streets one block northwest of the project site. The map indicates that the "Trescott" may have been removed before breaking up. No buried hulk is shown to be located on the project site or the block.

The California Archaeological Inventory reports a known site within one-quarter mile of the site in question.[3]. Therefore, the project site is within an archaeological sensitive area and there is a possibility of archaeological material at the site.

J. DOWNTOWN FIRE PROTECTION SERVICES[4]

San Francisco is experiencing accelerated development in the downtown area. Approved cumulative development, consisting mostly of highrise commercial office structures, would add about 9 million sq. ft. of gross square floor area to the downtown area (including the proposed project). It can be anticipated that the number of fire incidents would increase with the number of people occupying the district.

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[1]Roger and Nancy Olmsted, The San Francisco Waterfront Report: Historical Cultural Resources, prepared for Wastewater Management, December 1977.

[2]The map has not been revised since 1964, and ships not shown on the map have been discovered during excavation for other buildings.

[3]Sally Woodbridge, Architectural Historical Statement for an Environmental Impact Report on a Proposed 18-Story Office Building for the Southwest Corner of Spear and Howard Streets, 15 December 1980.

[4]Information contained in this section is from Bendix Environmental Research, Inc., Environmental Consultants and Fire Protection Engineers, confirmed by Emmet D. Condon, Deputy Chief, San Francisco Fire Department, September 24, 1981.

Since the new highrise buildings must comply with the Life Safety provisions of the San Francisco Building Code, most fires in these buildings can be expected to yield to minimum response by the Fire Department. Since all of these buildings will be of Type I construction[1] the chance of fire that spreads from building to building is relatively small. For example, when the old and highly combustible Produce Market was replaced by the highrise buildings of the Golden Gateway Redevelopment Project, the external fire protection requirements of the Fire Department decreased.

On the average, replacing older, more vulnerable occupancy structures with higher quality, greater occupancy highrise buildings probably has no measurable effect on the need for fire protection.

K. GROWTH INDUCEMENT

The project would add about 262,000 gross square feet of office and commercial space to the downtown supply. The new office space would be available for relocation or expansion of other San Francisco firms, for firms relocating from outside San Francisco, or for newly forming firms.

A total of about 1,048 office employees could ultimately be located in the new building (see IV.C., Employment, Housing and Fiscal Factors, page 57). To the extent that the project would attract new residents or commuters who would not otherwise be attracted to San Francisco or the Bay Area, it may be viewed as employment-generating and growth-inducing, and would result in a variety of indirect growth effects. The effects would include additional demand for about 233 dwelling units in San Francisco,[1] demands for a variety of commercial, social, medical and municipal services, and secondary demands on streets, freeways and transit systems (added non-commute travel generated by projects' employees).

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[1]Type I buildings have structural elements made of reinforced concrete, reiforced grouted masonry, reinforced hollow concrete masonry or steel; and the exterior walls, roofs, floors and some inner walls of "fire-resistive" incombustible construction." (San Francisco Building Code Section 1801)

The project would occur in an already developed downtown urban setting, and in itself would require no new construction or extension of public service or utility systems. It would, therefore, not require infrastructural improvements that would open or intensify development opportunities that do not already exist.

The project would continue the trend of intensifying office uses in the downtown, specifically South of Market Street.

Together with other new office development near the site, it could stimulate further office growth in the immediate vicinity, on lots now used for parking or in low rise structures containing businesses and light industrial uses (such as warehousing). Employee purchasing power could stimulate employee-oriented retail activity in the 2-3 block area to the north, west and south of the project site.

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[1]Net new office employment in San Francisco resulting from a particular project is difficult to determine. In this report, the effects have been analyzed as gross impacts; that is, the future with the project is compared directly to the present without the project. For example, it is estimated that from 40-50% of downtown office employees reside in the City. Under this assumption, because of the proposed project, about 233 households in the City would be created, calculated as follows: 262,411 gross square feet of office space ÷ 250 square feet per employee = 1,050 employees X 40 percent (those who would reside in San Francisco) = 420 employees ÷ 1.8 (av. no. of employed persons per downtown San Francisco household) = 233 dwelling units. Source: Pacific III Final EIR, EE 80.315, Certified 26 February 1981; Five Fremont Center Final EIR, EE 80.268, Certified 12 March 1981. The discussion in Section C.1. Employment, page , uses a different methodology for calculating employment based on net square footage of office and retail space. The example above is based on gross square footage as used by the Department of City Planning for calculating housing impacts.

V. ENVIRONMENTAL MITIGATION

A. VISUAL QUALITY AND URBAN DESIGN

Several mitigation measures have been committed to by the project sponsor and incorporated into the project design to mitigate impacts. The proposed structure would be stepped to avoid a benched skyline. The bay windows would mitigate the monotony of a smooth boxy facade. The proposed project would be developed to the lot line as requested by the City Planning Department to reinforce the street patterns and existing urban fabric. A landscaped plaza at the base of the proposed structure, a pedestrian way, and 2 roof terraces, which would be accessible to tenants, would add landscaped open space to the area. The plaza at the base of the proposed structure would be easily accessible to pedestrians. It would provide such amenities as benches, trash cans, landscaping, a variety of paving materials, and terraced levels to create visual interest as well as a human scale outdoor space. A flow-through lobby between the Spear Street frontage and the eastern pedestrian way would provide mid block pedestrian circulation.

The proposed brick skin would complement the older buildings in the area; while the ground floor treatment featuring clear glass windows and a taller first floor would relate to the ground floor treatment of other buildings in the area, as well as adding visual interest for the pedestrian.

Design of the building includes precast concrete exterior wall panels faced with brick to reflect the use of brick in the Folger Building located opposite the site.

The facade of the building would be articulated by shaded windows offset at a 30° angle to the facade to add visual interest to the building. The architect would use a non-reflective solar bronze glass to mitigate impacts from glare and reflective surfaces.

The pedestrian level wuld feature street trees, a landscaped plaza with flowering shrubs and pedestrian seating. Brick pavers would be used for the plaza and sidewalks to the curb.

A lower building limited to 8 stories would avoid obstructing views from the upper floors of adjacent buildings. For economic reasons (to maximize the rate of return of leasable space), the project sponsor is not proposing to construct a structure of lower height containing fewer gross square feet.

B. HOUSING

According to the formula contained in the Memorandum, "Housing Requirement for Office Development in San Francico" (Dean Macris, Director, Department of City Planning, July 1, 1981), the project would generate demand for about 233 housing units in San Francisco. The Planning Commission could require the project sponsor to satisfy this demand by development of on- or off-site housing, or by other means such as contributions to a non-profit housing development corporation.

Measures Accepted by the Project Sponsor:

The project sponsor would cause to be provided 233 housing units off-site of the project in San Francisco.

Measures Rejected by the Project Sponsor:

The project sponsor would not provide housing on the project site.

C. TRANSPORTATION

The following mitigation measures are accepted by the project sponsor:

- The project sponsor would encourage transit use by employees in the proposed building by means including the sale on-site of BART and MUNI passes, and promoting an employee carpool/vanpool system in cooperation with RIDES for Bay Area Commuters, or other such enterprises.

- The project sponsor would consider establishing flex-time work hours for office employees to reduce peak hour traffic impacts.

[1] City and County of San Francisco, Department of City Planning, The San Francisco Office/Housing Production Program (OHPP), Interim Guidelines for Administering the Housing Requirements Placed on New Office Development, 22 January 1982, page 5.

- Within a year from completion of the project, the project sponsor would conduct a survey in accordance with methodology approved by the Department of City Planning, to assess actual trip generation patterns of project occupants, and actual pick-up and drop-off areas for car poolers and van poolers. This survey would be made available to the Department of City Planning. Alternatively, at the request of the Department of City Planning, the project sponsor would provide an in-lieu contribution for an overall survey of the downtown area to be conducted by the City.

- The project sponsor would consider participation in a future areawide study of current parking conditions and future needs if the City can assure that needed parking facilities will be developed within a reasonable period of time. If new short-term or long-term parking is appropriate in the downtown area, the project sponsor would participate in the equitable funding of such facilities through a special assessment district according to criteria determined by the study. Parking for bicycles would be provided on the project site.

- Project contractors would insure that paving, landscaping and structures in the sidewalk area would be placed (subject to City approval) so as to minimize interference with pedestrian traffic.

- A bell and lighted sign would be installed to alert pedestrians of outbound vehicles at the parking garage driveway.

- With respect to construction impacts, the project sponsor would ensure that safe and convenient pedestrian access be maintained throughout the construction period on designated walkways around the project site. The delivery of equipment, materials, etc. would be assigned to Spear Street and prohibited during the peak traffic flow periods (7:30-8:30 a.m. and 4:30-5:30 p.m.). A truck routing plan would be developed in consultation with the Traffic Engineering Division of the City's Department of Public Works. A handicapped ramp curb cut would be constructed at the corner of Howard and Spear Streets.

- Muni "eyebolt fixtures" suitable for suspending Muni trolley wires would be affixed to the project (if recommendated by the Muni Planning Department).

- Coordination with construction contractors and affected utility companies for any nearby projects currently under construction in order to minimize cumulative construction traffic impacts due to lane closures and street excavation.

- Building directories and visual aids indicating the location of the freight elevators would be placed in the loading area of the building.

- An additional freight loading space (for vans) would be designated in the project's basement area.

The following measures which could reduce the environmental impacts of the proposed project have been rejected by the project sponsor:

- The location of a transportation broker in the project management office of the building.

- The sponsor would investigate the development of shared off-site parking facility to provide part or all of the 50 parking spaces for the project.

- Project sponsor would provide short-term parking and preferential parking for carpools, vanpools, bicycles, handicapped only.

- Designing of access so that only one curb cut would be required.

- The project sponsor would not agree to contribute funds for maintaining and augmenting transportation service, in an amount proportionate to the demand created by the project, as provided by Board of Supervisors Ordinance Number 224-81 or any subsequent equitable funding mechanism developed by the City.

- The project sponsor would not provide free or reduced cost transit passes to employees.

- The project sponsor would not provide a third loading dock.

- The project sponsor would not convert the spaces, fee structure and hours of operation in the adjacent parking garage to a system designed to encourage short-term parking use of that garage. (The parking garage is owned by a separate entity).

- The project sponsor would not agree to limit contruction truck operations to the hours between 9 a.m. and 4 p.m. to minimize peak-hour traffic conflicts.

D. NOISE

To mitigate pile driving noise impacts, San Francisco has in the past issued special permits to require pile driving to take place when the least number of people would be impacted. The developer will seek such a permit. For the project site, the least number of people would be affected after office hours and on the weekends.

In addition to restricting hours of operation, the City has required that holes for piles be pre-drilled to minimize the depth through which the piles would have to be driven. This minimizes the number of blows per pile and therefore the number of noise-generating impacts. The hammer is also kept closer to the ground where shielding from junction buildings is more effective. The developer is committed to pre-drilling the holes.

Noise barriers between the pile drivers and the adjacent buildings are effective in reducing noise levels at ground level by up to 15 dBA; however, upper floors are not shielded by typical construction fence/noise barriers. A construction safety fence would be built and would serve to reduce noise at street level.

E. AIR QUALITY

1. Air Quality

The California Health and Safety Code[1] requires that measures be taken to minimize dust generation, specifically watering down of demolition materials and soils. An effective watering program (complete coverage twice daily) can reduce emissions by about 50%. The project sponsor would require the contractor to implement a twice-daily watering program, which would reduce the likelihood of airborne construction dust and particulates exceeding state and federal standards.

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[1]State of California Health and Safety Code, Section 41700.

The general contractor would maintain and operate construction equipment so as to minimize exhaust emissions. The project sponsor would have construction truck drivers in loading or unloading queues turn off their engines when not in use to reduce vehicle emissions.

The measures discussed under Transportation Mitigation, page 110, would also mitigate air quality impacts. These measures would include car pooling, van pooling, and staggered work hours.

2. Climate

The location of the plaza and terraces on the southern end of project would protect the areas from prevailing winds while providing sunlight in the morning hours.

F. ENERGY

New non-residential construction initiated after July 1978 is required to comply with Title 24, Division 20, Article 2 of the California Administrative Code regarding Energy Conservation Standards for New Non-residential Buildings. Designed to help reduce energy consumption in California, these regulations set forth design criteria for buildings and stipulate maximum allowable energy consumption figures. The proposed structure would comply with Title 24 by the prescriptive method, i.e., building envelope and energy using systems would comply with individual Title 24 requirements. This would be expected to result in an energy consumption level below the upper limit of 126,000 BTU per square foot per year allowed by Title 24 for buildings of this type.

The following is a list of energy conservation measures planned to be incorporated into the project which go beyond requirements of Title 24.

- Employ HVAC equipment of the highest coefficient of performance.
- Employ an air or water side economizer.
- Employ return air light fixtures to reduce amount of air (hence horsepower) required to cool building.
- Employ inlet vanes on fans to reduce horsepower during part load conditions.
- Reset boiler to reduce heating water temperature as outside ambient temperature rises.
- Employ reset temperatures to provide only enough cooling to satisfy the warmest zone.

- Employ "dead band" type variable air volume boxes and room thermostats to assure that simultaneous heating and cooling does not occur.
- Load management.
- Watt miser lamps.
- Invididual switching.
- Time clock control on all circuits.
- Operable windows included in the design
- An energy audit (to be performed by PG&E or other certified energy auditor) after a year of normal operations to identify conservation measures which would have a simple payback of 3 years or less. The audit results would be furnished to the Department of City Planning.
- Implementation of any such measures identified during the energy audit.

Prior to the application for this building permit a report would be made available to the Department of City Planning concerning each of the mitigation measures in the preceding list. The report would state whether each measure would be included in the project and explain each decison.

G. GEOLOGY AND SEISMICITY

1. Geology[1]

Of the various designs available for construction on Bay Mud, a pile supported structure is recommended for this site. The Franciscan Formation is close enough to the surface to allow piles to penetrate 3 to 5 feet of bedrock, thus relieving the Bay Mud of providing support of the structure's unstabilized weight. Assuming a cutoff elevation of approximately 20 feet below the existing surface the piles would vary from 45 to 55 feet in length. To facilitate bedrock penetration a steel tip "stinger"[2] at least 3 feet long would be cast into the pre-stressed, concrete piles. Actual pile design (size, material and stinger weight) would be governed by the allowable structural capacity.

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[1]Rollo, Frank L., Planner, Harding-Lawson Associates, letter to Clifton Brinkley, Construction Manager, One Market Plaza, 3 October 1980, page 2.

[2]Stinger: a tapered steel tip cast into the end of driven, concrete piles to facilitate bedrock penetration and to prevent slippage in sheared rock.

The necessary factors required for a good pile foundation design include 1) a thorough test boring program for soils engineering evaluation, 2) ascertainment of satisfactory soil or rock conditions below the tip and within the bearing length of the pile, 3) consideration of down drag on the pile and 4) supervision of pile installation by soils engineers.[1] These factors are particularly important where piles are driven through Bay Mud into more stable soil or rock. These geotechnical engineering investigations have been completed to develop a satisfactory foundation design and a soils engineer would supervise pile installation.[2]

During the excavation phase the site would be dewatered as necessary to keep the base of the pit dry.[3]

2. Seismicity

Lateral spreading, lurching and liquefaction hazards would be substantially reduced by adopting a pile-supported foundation design. Many buildings on piles in the filled, Bay Mud areas survived the 1906 earthquake, but since none of these were founded on bedrock there are no historical data regarding embedded pile behavior in San Francisco.[4] The bedrock beneath the proposed site contains undifferentiated Franciscan Formation rocks (mostly shale and sandstone in this case) which are considered to have good stability under earthquake conditions.[5]

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[1]Lee and Praszker, "Bay Mud Developments and Related Structural Foundations," Geologic and Engineering Aspects of San Francisco Bay Fill, California Division of Mines and Geology, Special Report 97, San Francisco, CA, 1969, page 51.

[2]Clifton Brinkley, Construction Manager, One Market Plaza, telephone conversation, 11 December 1981.

[3]Mitigation Number 7 from Initial Study (Appendix A, page A-28).

[4]Lee and Praszker, "Bay Mud Developments and Related Structural Foundations," Geologic and Engineering Aspects of San Francisco Bay Fills, California Division of Mines and Geology, San Francisco, CA, May 1969, page 52.

[5]URS/John A. Blume and Associates, San Francisco Seismic Safety Investigation, San Francisco, CA, June 1974, page 6.

H. HISTORICAL AND CULTURAL RESOURCES

If historical artifacts are discovered during construction of the proposed project, the contractor would stop work in the area of the find to permit professional evaluation of the find. The Office of Environmental Review, the President of the Landmarks Preservation Advisory Board, the Director of the Maritime Museum in San Francisco, and the Regional Archaeological Site Survey Office at Cabrillo College at Aptos, California, would be notified. Any artifacts found would become the property of the project sponsor. The Office of Environmental Review would recommend mitigation measures if necessary. All recommendations would be sent to the State Office of Historic Preservation. Construction that may be damaging to historical resources discovered would be suspended for a maximum of 4 weeks to permit inspection, recommendation and retrieval (if appropriate).

I. HAZARDS[1]

An evacuation and emergency response plan would be developed by the project sponsor or building management staff, in consulation with the Mayor's Office of Emergency Services, to insure coordination between the City's emergency planning activities and the project's plan and to provide for building occupants in the event of an emergency. The project's plan would be reviewed by the Office of Emergency Services and implemented by building management before issuance by the Department of Public Works of final building permits.

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[1] A detailed evaluation of hazard risks was focused out of the EIR during the initial study process. This mitigation measure has, however, since been added and accepted by the project sponsors.

VI. SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

A. VISUAL QUALITY AND URBAN DESIGN

The proposed structure would partially block views of the Bay to the east from the upper stories of 2 adjacent high rise structures to the west of Spear Street. Views to the financial district skyline from the Embarcadero Freeway to the south also would be partially blocked.

B. TRANSPORTATION

Traffic increases generated by cumulative downtown development including the proposed project would add to the congested conditions that currently exist on freeways and freeway ramps. The 201 Spear Street project would amount to 2-3% of the cumulative peak hour trip generation of the projected downtown development.

Muni lines with load factors projected to be greater than 1.00 would be experiencing increased congestion due to ridership from the proposed project in combination with other downtown development. The other transit operators serving the Bay Area would experience a 2-3% increase in ridership due to the project.

The increased parking demand and the parking displacement due to the project would effectively raise the parking occupancy in the project area from 92% to 100%. In addition, the cumulative downtown development projected for the next 3 years would add to the parking demand in the downtown area. Although the proposed project would account for 3% of these increase (470 spaces out of 15,000 spaces) in the parking demand, there would be cumulative impacts. It is probable that there would be an increased parking demand south of Harrison Street and beyond. Added vehicle circulation would also result from the increased number of increased number of vehicles seeking the limited number parking spaces, increasing street congestion.

C. EMPLOYMENT, HOUSING, AND FISCAL FACTORS

The proposed project would result in an increase of office space of 262,000 gross square feet and generate 1,048 office employees.

D. ENERGY

Assuming a 50-year lifetime for the building, the estimated lifetime energy cost (including construction, operation, and removal) would be 3.2 trillion BTU. This is the equivalent of 576,000 barrels of oil.

E. GEOLOGY AND SEISMICITY

If a maximum projected tsunami or seiche within San Francisco Bay were to occur at high tide, the project site would be flooded by about 4 feet of water.

F. CONSTRUCTION NOISE

During pile driving, noise levels outside the nearest office buildings would reach as high as 99 dBA. Inside, the noise levels would be expected to reach 69 dBA, and would be expected to annoy and distract office workers. Conversations would have to take place at a higher vocal level; however, it would not interfere with telephone use.

G. AIR QUALITY

During construction, airborne dust and dustfall downwind from the site would be increased. Although no measurable effect on regional photochemical oxidant concentrations would be anticipated due to increases in vehicular traffic from the project, photochemical oxidant are expected to be a persistent problem in the future of the Bay Area.

VII. ALTERNATIVES TO THE PROPOSED PROJECT

A. ALTERNATIVE 1: NO PROJECT

1. Description of Alternative

This alternative would involve no change to the project site as it now exists. The 160 space, ground level parking lot would remain in use for an unspecified length of time. This alternative would hold open future options for the land to be developed under other permitted uses in the C-3-S Commercial District or for other public purposes.[1]

2. Environmental Effects of Alternative

The environmental effects of the no-project alternative would be to keep conditions identical to those described in the Environmental Setting Section. Current levels of traffic, parking demand, on-street loading, noise, air pollution, energy consumption, wind, shadow and visual effects would remain unchanged. The no project alternative would provide no additional employment, no increase of taxable revenues accruing to the City, and no increased cost to the City for supplying services.

3. Sponsor's Reasons for Rejecting Alternative

The no-project alternative has been rejected by the project sponsor because the site is currently vacant and used for surface parking, and in the opinion of the project sponsor, would perpetuate an inefficient and wasteful use of land resources in the near downtown area. The no-project alternative would not provide maximum investment potential of the site, according to the project sponsor.

B. ALTERNATIVE 2: COMMERCIAL USE OTHER THAN OFFICES

1. Description of Alternative

This alternative would involve development of the site for any principal use permitted in

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[1] One concept now under consideration by CalTrans, which would require use of the site, calls for extension of the Southern Pacific commuter train lines from the existing station at 4th and Brannan Streets to the Rincon Annex site at Spear and Mission Streets. Implementation of this concept would require use of the site for rail trackage and would preclude development of the proposed office building. The rail extension project is opposed by Southern Pacific Development, one of the project sponsors.

the C-3-S district other than office space. The following generalized list gives the type of principal uses permitted: offices, hotels/motels, clinics (human and animal), philanthropic facilities, child care centers, schools, churches, retail businesses, laundries and dry cleaners, assembly and entertainment facilities home and business services (repair shops), parking lots and garages, automotive sales and repairs, wholesale and warehousing facilities, manufacturing and processing facilities and public structures. (Detailed descriptions of these uses are given in Sections 215 through 227 of the City Planning Code.) Among these possibilities the alternative considered most viable by the Sponsor would be to use the proposed structure as a hotel.

This alternative would consist of a structure that would have the same building envelope and gross square footage as the proposed project, but would contain hotel amenities such as additional parking spaces, a restaurant and/or lounge, meeting rooms, banquet rooms, facilities for car rental, air travel reservations and luggage handling.

2. Environmental Effects of Alternative

Wind, shadow and visual effects of this alternative would be similar to those of the proposed project except that the possible inclusion of balconies would provide an additional differentiation of surface planes on the structure. Hotel use would generate daily person trips at a higher daily rate and fewer peak hour trips than the proposed project. Hotel use would generate less employment and less demand for employee housing, use less energy and consume more water than the project as proposed. Actual differences in these factors would vary with the design of the hotel.

3. Sponsors Reasons for Rejecting Alternative

The project sponsor has rejected this alternative because the site is near a proposed hotel in the Rincon Point - South Beach Redevelopment Project. It is the sponsor's opinion that a second hotel in this area would not provide a reasonable return on the current investment or the investment potential of the site.

C. ALTERNATIVE 3: NO ON-SITE PARKING

1. Description of Alternative.

In the no-parking alternative the 50 off-street parking spaces included in the proposed project would not be provided.

2. Environmental Effects of Alternative

Environmental effects of this alternative would be to increase projected long-term parking demand associated with the project. Based on the trip generation characteristics of the project as proposed[1] about 415 parking spaces would be required. The proposed project would also displace 160 long-term parking spaces in an existing surface lot on the site creating a total demand for 575 spaces. Off-street parking facilities in the project area are presently at 92% occupancy levels and would be increased to 100%+. The building tenants would have to seek accommodation in overloaded, nearby off-street parking facilities or in peripheral areas, particularly south of Harrison Street. Building access for handicapped persons would be difficult unless 1 or more on-street handicapped parking spaces were created. Lack of on-site parking would increase vehicle circulation by 9% over the project as proposed, as a larger number of vehicles would be seeking the limited number of nearby parking spaces, thus increasing street congestion and automobile emissions. It is also possible that lack of on-site parking would discourage some people, who might expect such amenities, from driving to the site.

The project site is in one of the peripheral parking belts, which are defined by the Downtown Transportation Plan as "areas appropriate for short-term parking facilities to replace spaces removed from the core..."[1] Current city policy is to discourage long-term parking in these belts and to encourage short-term parking.[2] The no on-site parking alternative would be more responsive to the Downtown Transportation Policy than the project as proposed since 160 long-term parking spaces would be eliminated and none would be created. No short-term parking would be created by this alternative or by the project as proposed.

3. Sponsor's Reasons for Rejecting Alternative

The lack of on-site parking may affect the sponsor's ability to find tenants. Many firms require parking for company vehicles and visitor parking. It would also make access to the building for handicapped persons more difficult.

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[1]Downtown Transportation Plan, Classification of Elements, page 24 in the "Revision to the Transportation Element of the Master Plan Regarding Parking," adopted by the City Planning Commission, Resolution No. 764620, January 1979.

[2]See IV.D.4. Parking Impacts, page 79.

D. ALTERNATIVE 4: COMBINED OFFICE AND RESIDENTIAL USES

1. Description of Alternatives

a. Mixed Use Conforming to Interim Controls. This alternative would consist of a structure that would have the same exterior design and contain the same gross square feet (gsf) of floor space as the proposed project. This alternative could contain housing units as well as office space, up to the amounts shown below:

Office: about 159,000 gsf occupying floors 1-10 (60%)
Housing: about 105,000 gsf (105 units at about 1,000 gsf each) occupying floors 10-18 (40%).

Like the proposed project, this alternative would provide 50 subsurface parking spaces. Since 1 space would be required for each 4 residential units (Planning Code Section 151), a minimum of 26 spaces would be required.

This alternative represents the maximum housing mix which could be accommodated without altering the building envelope. Section 126 of the Planning Code allows certain developmental bonuses to be added to the basic FAR to determine maximum FAR. These bonuses, which include multiple building entrances, sidewalk widening, plazas, and setback design, would allow additional floor space which then could be used for housing units. This could only be accommodated by altering the exterior of the building to dimensions in excess of those provided for in Height and Bulk District 240-G.

b. Mixed Use Conforming to Guiding Downtown Development Formula. This alternative would be similar to the alternative described in Section 4.1.a., above, since no change would be made in the building envelope. Based on the formula of providing 640 gsf of housing for each 1,000 gsf of office space with the requirements of approximately 0.9 units per 1,000 gsf of office space, the maximum possible mix would be as shown below:

Office: about 161,000 gsf occupying floors 1-9 (61%)
Housing: about 103,000 gsf (145 units at about 710 gsf each) occupying floors 10-18 (39%).

Theoretically, the Guiding Downtown Development formula would provide a basic FAR of 6:1 for the alternative project with an additional FAR of 2:1 for incorporated housing. The formula includes space proposed for parking in the FAR calculation. The

maximum FAR of 8:1 would produce 301,688 gsf for the proposed building site. Applying the formula provisions described in the previous paragraph, 163 housing units of about 740 gsf each would be provided. This alternative could not be accommodated in the proposed structure without altering its height and/or bulk. A mixed-use alternative which would conform to the Guiding Downtown Development formula would be similar to that shown in Figure 28, page 126, and described in Table 20, page 127. The major difference would be that the upper 8 floors would be used for housing. Some exterior alteration to the windows and balconies would be incorporated into the design.

2. Environmental Effects of Alternatives

Wind, shadow, and visual effects of the alternative would be similar to those of the proposed project, except that the possible inclusion of balconies for some or all of the residential units would provide additional visual differentiation at the upper levels of the building.

The distinguishing characteristic of this alternative would be its provision of housing units which would probably sell for an amount as yet undetermined. This alternative would contribute to the City's housing stock, currently in short supply.

This alternative would expose its residents to the environmental conditions of the near-downtown area, including greater levels of traffic, noise, and air pollution than are common in most residential areas. It is expected that inside the rooms facing the freeway the noise level would be Ldn 45 dBA, with instantaneous levels of 50 dBA. These levels are within acceptable standards set by California Administrative Code Title 25, although 50 dBA could cause sleep disturbance.

In addition to project modification at the proposed site, other housing units would have to be located elsewhere in the City, unless the City decides to give more than 1 for 1 credit for housing on-site, as has been recommended by some developers. The alternative conforming to interim controls would need at least 35 more units to fulfill the housing formula requirements (140 housing units for 159,000 gsf of office space) for the proposed building envelope. The alternative Conforming to Guiding Downtown Development (GDD) would provide the required number of units but the size of each unit would be 10 gsf less

than the average residential gsf derived from the GDD assumption (1.8 persons per unit allowing 400 gsf per person = 720 gsf). Policy on credit for on-site housing is currently under development by the Department of City Planning. No change in present policy of credit at 1 for 1 housing has been recommended at this time. The location of this off-site housing or even if it would be all in one location, has not been determined. The housing mix, either on- or off-site, and the inclusion of low and moderate income housing, and the method of financing for any of the housing alternatives, have not been determined.

3. Sponsor's Reasons for Rejecting Alternative

The project sponsor has rejected this alternative because the inclusion of residential units in the proposed project would require installation of additional elevators, security systems, plumbing, wiring and related services that would increase construction costs and reduce usable floor area. Although predicted noise levels inside the rooms facing the freeway conform to California Administrative Code, Title 25, the residents would be exposed to noise levels which could distrub sleep. Noise insulation in excess of Title 25 standards could alleviate this problem.

Housing units and their supporting services proposed for residential redevelopment at nearby Rincon Point may effect the demand and marketability of housing units at this location. These effects are uncertain since there is not yet a formal plan for Rincon Point.

E. ALTERNATIVE 5: OFFICE STRUCTURE INCORPORATING FEATURES OUTLINED IN GUIDING DOWNTOWN DEVELOPMENT

1. Description of Alternative

This alternative addresses the issues contained in the City Planning Commission's series of regulatory proposals for managing development in downtown San Francisco. The proposals affect the size, design, and location of major buildings. They also deal with the effect new development has on housing, transportation, and open space, on architecturally significant older buildings, and on the general environment and livability of the Central Business District and near-downtown support districts. A comparison is made in Table 20, page 122, between the proposed project (Figure 28, page 121) and the guidelines which would pertain to the project. Consequent impacts or changes are identified in the table and shown graphically (Figure 28) where appropriate. Notable differences

201 SPEAR

Alternative 5: Office Structure Incorporating Guiding Downtown Development Features

Source: EIP Corp.

Figure No. 28

TABLE 20

DOWNTOWN GUIDELINES COMPARISON FOR ALTERNATIVE 5

GUIDING DOWNTOWN DEVELOPMENT	201 SPEAR STREET PROJECT	GUIDELINE-INDUCED CHANGE
A. Building Size, Design and Appearance	A.	A.
(1) Maximum Floor Area Ratio (FAR) for C-3-S District with housing and retail space not to exceed 8:1. Maximum base FAR to be 6:1.	(1) Project as proposed: Office = 262,000 ÷ Site Area of 37,711 sq. ft. = 6.9:1 (Existing FAR allowed is 7:1)	(1) Project could conform to proposed 6:1 base FAR through reducing gross floor area by 14% (36,000 square feet).
(2) Average floor area per floor should be a maximum of 20,000 square feet.	(2) Average floor would contain 14,555 sq. ft. as proposed. No floor would exceed 17,000 sq. ft.	(2) ---*
(3) 1/15 of total floor area above building midpoint above 65 feet to be transferred to lower floors.	(3) 117,600 sq. ft. (45%) of floor area would be above the building midpoint. 143,500 sq. ft. (55%) of floor area would be below the building midpoint. Floors 1-7 = 16,500 sq. ft. per floor Floors 8-15 = 14,000 sq. ft. per floor Floors 16-18 = 11,200 sq. ft. per floor	(3) ---
(4) Average maximum plan dimension not to exceed 200 feet. Increase in lower floors permitted with decrease in upper floors.	(4) Average maximum plan dimension for floors 1-7 is 206 feet; for floors 8-15 is 177 feet; for floors 16-18 is 153 feet.	(4) ---
(5) Strengthen Urban Design Standards	(5)	(5)
a. Create interesting street frontages.	a. Base of building visually differentiated from upper floors.	a. ---
b. Conserve traditional street and building relationships.	b. Building would assist in visually defining the alignment of Spear Street. Open circulation space would be provided around and through the building.	b. ---
c. New facades to relate to nearby facades.	c. Modern facade of building would relate to other modern buildings across Spear Street from site.	c. ---
d. Preserve scale, form and building proportions in new construction.	d. Building would relate to the scale and form of existing and proposed highrises in the project area. Building would not relate to lower 5 and 8-story structures across Spear and Howard Streets.	d. ---
(6) Incorporate art work in new buildings.	(6) No art work proposed.	(6) Would require addition of art work.
(7) Provide for the installation of street trees.	(7) Street trees would be provided.	(7) ---

*---indicates that the project conforms to the Downtown Guidelines and that there would be no guideline-induced change.

DOWNTOWN GUIDELINES COMPARISON FOR ALTERNATIVE 5 (continued)

GUIDING DOWNTOWN DEVELOPMENT	201 SPEAR STREET PROJECT	GUIDELINE-INDUCED CHANGE
B. Retail Space	B.	B.
(1) Floor area allowance for ground retail uses (maximum 2,000 sq. ft. per establishment).	(1) There is 5,000 square feet of retail or office space available on first floor. Project sponsor is uncertain at this time whether this space is marketable and feasible to be leased as retail. If not, it would be leased as office space.	(1) ---
(2) Provide adequate convenience shopping and facilities.	(2-4) Ground floor, convenience shopping retail space would serve occupants of the proposed building and of adjacent structures.	(2) ---
(3) Ground floor space on street frontage and pedestrian ways devoted to retail uses.		(3) Ground floor space would be used for retail.
(4) Retail space to be limited so as not to compete with the downtown core.		(4) ---
C. Recreation and Open Space	C.	C. ---
Provide recreation and open space in C-3-S District of 1/50 commercial space.	Open space and pedestrian ways proposed = 11,000 sq. ft. (1/50 x gross area of 262,000 square feet = 5,240 square feet.)	
D. Transportation and Circulation	D.	D.
(1) Contribute funds for maintaining and augmenting transportation service (Transit Fee and Assessment District).	(1) Transit contributions not part of base proposal.	(1) Would have to contribute funds to Transit Fee and Assessment District.
(2) Employ a transportation broker responsible for encouraging transit use and ridesharing.	(2) Transportation broker not part of base proposal.	(2) Would have to employ transit broker.
(3) Provide a "reasonable number" of bicycle and moped parking spaces.	(3) Committed to by project sponsor. Located ground level, exterior, Howard Street.	(3) ---
(4) Participate with other developers in studies of providing "intercept" commuter parking facilities and shuttle service to project.	(4) Under consideration by project sponsor.	(4) Would have to participate in studies.
(5) New long-term parking to be located on periphery of downtown; new short-term to be adjacent to core area.	(5) 50 long-term parking spaces to be provided.	(5) Would require conditional use authorization and further reduction in bulk of 18,000 square feet.
(6) Provide off-street loading at 0.1 space per 10,000 sq. ft. of building area.	(6) Two loading spaces would be provided.	(6) Three loading spaces would be required. One space would have to be added.
(7) Minimum loading space length to be one at 55 ft., others at 35 ft.; maximum curb cut to be 24 ft.	(7) Minimum loading spaces proposed are 2 at 35 ft. Proposed curb cut is 30 ft.	(7) One loading space would have to be increased to 55 ft. Curb cut would have to be reduced to 24 ft.
(8) Access to off-street parking or loading should be from minor and non-pedestrian streets in preference to transit preferential streets.	(8) Spear Street is not a transit preferential street.	(8) ---
E. Housing	E.	E. Housing on or off-site would be required.
Housing should be provided at rate of 640 sq. ft. for every 1,000 sq. ft. of office space.	Housing is not a part of base proposal.	
F. Building Preservation	F.	F. ---
Avoid destruction of historical buildings.	Site is vacant.	
G. Cumulative Impact Assessment	G.	G. ---
Sponsors to contribute funds to keep cumulative environmental impact data current over time.	To be determined.	

include the reduction of the building height by 25 feet, reduction of its bulk by 34,000 square feet and the addition of a third off-street loading dock. If parking were included in this alternative a conditional use permit would be required and the bulk would be reduced further by approximately 18,000 square feet since the subsurface parking area would be included in the FAR calculation. This would make the building approximately 37 feet shorter than the project as proposed. The project as proposed would conform to most of the guidelines proposed in Guiding Downtown Development.

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APPENDIX A

FINAL INITIAL STUDY[1]

201 SPEAR STREET OFFICE BUILDING

SPEAR AND HOWARD STREETS

SAN FRANCISCO, CALIFORNIA

EE 80.337

June 1981

[1]Following completion of the Initial Study, the proposed project design was refined, partly in response to environmental issues raised in the Initial Study. The project refinements include:

- Freight access changed from Steuart Street to Spear Street
- Basement parking spaces reduced from 56 to 50
- The distance between the freeway and the building reduced from 70 feet to 60 feet
- Redesign of the building, including the addition of roof terraces for the 8th and 16th floors
- Addition of a passenger elevator reaching from the basement to the ground floor.

In addition, differences among data in the Initial Study and EIR are attributable to the availability of additional data during preparation of the EIR.

100 Larkin Street San Francisco, CA 94102

CONTENTS

I. PROJECT DESCRIPTION

The proposed 201 Spear Office Building is located at the southeast corner of Howard and Spear Streets, Assessor's bLock 3741, Lots 16, 17, and 26, and portions of Lots 1 and 19. The site is 37,711 square feet and is currently used for surface automobile parking. There are no structures on-site. Existing zoning is C-3-S (Downtown Support District).

The project sponsor, One Market Plaza, a joint venture between Southern Pacific Land Company and the Equitable Life Assurance Society of the United States, proposes to develop an 18-story office building (plus basement) on the site with a total gross floor area of 255,854 square feet (out of a total allowable gross floor area of 263,977). Fifty-six underground parking spaces for tenants and visitors would be provided, with access from Spear Street. Freight access would be taken from Steuart Street.

Design of the structure features a sculptured brick facade similar to the Folger Building on the opposite side of Spear Street, and shaded windows at a 30^{o} angle to the facade. Construction cost of the project is estimated at $18,000,000.

Adjacent land uses are commercial and governmental. An 8-level parking structure is located immediately northeast of the site. The elevated structure of the Embarcadero Freeway forms the southern to southeastern boundary. Office buildings up to 15 stories are located to the southwest, west, and northwest. The Rincon Annex Postal Facilities are situated north of Howard Street. The site is adjacent to the Rincon Point - South Beach Redevelopment Area.

Location Map

Figure No. 1

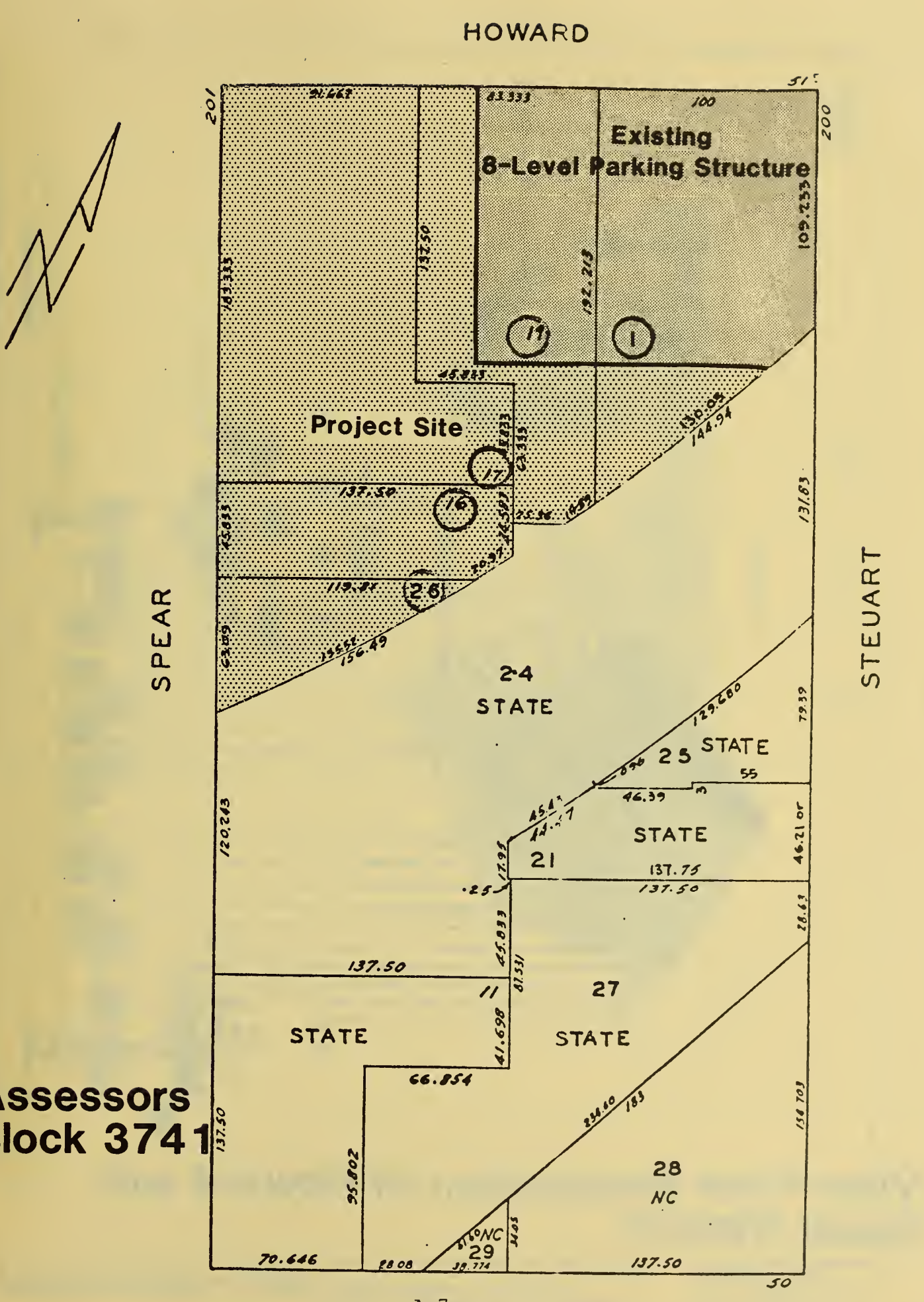
HOWARD
Existing
8-Level Parking Structure
Project Site
SPEAR
STEUART
FOLSOM
24
STATE
25
STATE
21
STATE
11
STATE
27
STATE
28
NC
29
NC
Assessors
Block 3741

Figure No. 2

View From Intersection of Howard and Spear Streets

Figure No. 3

Landscape Plan

201 SPEAR OFFICE BUILDING

SOUTHERN PACIFIC DEVELOPMENT COMPANY

PRIVATT-WEAVER ARCHITECTS AIA

CHIN & HENSOLT, INC. STRUCTURAL ENGINEERS

Figure No. 4

ENVIRONMENTAL EVALUATION CHECKLIST
(Initial Study)

Project File No: EE 80.337 Title: 201 Spear Office Building

Address: 201 Spear Street Assessor's Block and Lot: 3741, Lots 16, 17 26, portions of 1 and 19.

A. GENERAL CONSIDERATIONS:	Yes	Maybe	No	N/A	Disc.**
1. Would the project conflict with objectives and policies in the Comprehensive Plan (Master Plan) of the City?	X				X
2. Would the project require a variance, or other special authorization under the City Planning Code?	X				X
3. Would the project require approval of permits from City Departments other than DCP or BBI, or from Regional, State or Federal Agencies?	X				X
*4. Would the project conflict with adopted environmental plans and goals?			X		

B. ENVIRONMENTAL IMPACTS:	Yes	Maybe	No	N/A	Disc.
1. Land Use. Would the proposed projects:					
a. Be different from surrounding land uses?			X		X
*b. Disrupt or divide the physical arrangement of an established community?			X		X
2. Visual Quality and Urban Design. Would the proposed project:					
a. Obstruct or degrade any scenic view or vista open to the public?			X		X
b. Reduce or obstruct views from adjacent or nearby buildings?		X			X
*c. Create a negative aesthetic effect?		X			X

** Further discussion warranted
* Denotes State EIR Guidelines, Appendix G, normally significant effect.

2. Cont'd.	Yes	Maybe	No	N/A	Disc.
d. Generate light or glare affecting other properties?	___	___	X	___	X
3. Population/Employment/Housing: Would the proposed project:					
a. Alter the density of the area population?	X	___	___	___	X
*b. Have a growth-inducing effect?	___	X	___	___	X
*c. Require relocation of housing or businesses, with a displacement of people, in order to clear the site?	___	___	X	___	X
d. Create or eliminate jobs during construction and operation and maintenance of the project?	X	___	___	___	X
e. Create an additional demand for housing in San Francisco?	X	___	___	___	X
4. Transportation/Circulation. Would the construction or operation of the project result in:					
a. Change in use of existing transportation systems? (transit, roadways, pedestrian ways, etc.)	X	___	___	___	X
*b. An increase in traffic which is substantial in relation to existing loads and street capacity?	___	X	___	___	X
c. Effects on existing parking facilities, or demand for new parking?	X	___	___	___	X
d. Alteration to current patterns of circulation or movement of people and/or goods?	X	___	___	___	X
e. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?	___	X	___	___	X
f. A need for maintenance or improvement or change in configuration of existing public roads or facilities?	___	X	___	___	X
g. Construction of new public roads?	___	___	X	___	___

	Yes	Maybe	No	N/A	Disc.
5. Noise					
a. Would the proposed project result in generation of noise levels in excess of those currently existing in the area? (during construction)	___	X	___	___	X
b. Would existing noise levels impact the proposed use?	___	X	___	___	X
c. Are Title 25 Noise Insulation Standards applicable?	___	___	___	X	X
6. Air Quality/Climate. Would the proposed project result in:					
a. Violation of any ambient quality standard or contribution to an existing air quality violation?	___	X	___	___	X
b. Exposure of sensitive receptors to air pollutants?	___	___	X	___	X
c. Creation of objectionable odors?	___	___	X	___	X
d. Burning of any materials including brush, trees, or construction materials?	___	___	X	___	X
e. Alteration of wind, moisture, or temperature (including sun shading effects), or any change in climate, either locally or regionally?	___	X	___	___	X
7. Utilities and Public Services. Would the proposed project:					
a. Have an effect upon, or result in a need for, new or altered governmental services in any of the following?					
fire protection	___	___	X	___	X
police protection	___	___	X	___	X
schools	___	___	X	___	X
parks or other recreational facilities	___	___	X	___	X
maintenance of public facilities	___	___	X	___	X
power or natural gas	___	___	X	___	X
communications systems	___	___	X	___	X
water	___	___	X	___	X
*sewer/storm water drainage	___	___	X	___	X
solid waste collection and disposal	___	___	X	___	X

	Yes	Maybe	No	N/A	Disc.
8. Biology					
a. Would there be a reduction in plant and/or animal habitat or interference with the movement of migratory fish or wildlife species?	___	___	X	___	X
b. Would the project affect the existence or habitat of any rare, endangered or unique species located on or near the site?	___	___	X	___	___
c. Would the project require removal of mature scenic trees?	___	___	X	___	___
9. Land. (topography, soils, geology) Would proposed project result in or be subject to:					
*a. Potentially hazardous geologic or soils conditions on or immediately adjoining the site? (slides, subsidence, erosion, and liquefaction)	___	X	___	___	X
b. Grading? (consider height, steepness and visibility of proposed slopes; consider effect of grading on trees and ridge tops)	___	___	X	___	___
c. Generation of substantial spoils during site preparation, grading, dredging or fill?	___	___	X	___	X
10. Water. Would the proposed project result in:					
*a. Reduction in the quality of surface water?	___	___	___	X	___
*b. Change in runoff or alteration to drainage patterns?	___	X	___	___	X
*c. Change in water use?	___	X	___	___	X
*d. Change in quality of public water supply or in quality or quantity (dewatering) of groundwater?	___	X	___	___	X
11. Energy/Natural Resources. Would the proposed project result in:					
*a. Any change in consumption of energy?	X	___	___	___	X
*b. Substantial increase in demand on existing energy sources?	___	X	___	___	X

11. Cont'd.	Yes	Maybe	No	N/A	Disc.
c. An effect on the potential use, extraction, conservation or depletion of a natural resource?	___	X	___	___	X
12. Hazards. Would the proposed project result in:					
*a. Increased risk of explosion or release of hazardous substances (e.g., oil, pesticides, chemicals or radiation), in the event of an accident, or cause other dangers to public health and safety?	___	____	___	X	____
*b. Creation of or exposure to a potential health hazard?	___	____	X	___	____
*c. Possible interference with an emergency response plan or emergency evacuation plan?	___	____	X	___	____
13. Cultural. Would the proposed project:					
*a. Include or affect a historic site, structure, or building?	___	X	___	___	X
*b. Include or affect a known archaeological resource or an area of archaeological resource potential?	___	X	___	___	X
*c. Cause a physical change affecting unique ethnic or cultural values?	___	____	X	___	X

C. MITIGATION MEASURES:	Yes	No	Disc.
a. Are mitigation measures included in the project?	X	___	X
b. Are other mitigation measures available?	X	___	X
D. ALTERNATIVES:			
a. Were alternatives considered:	X	___	X

E. MANDATORY FINDINGS OF SIGNIFICANCE:	Yes	No	Disc.
*1. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal, or eliminate important examples of the major periods of California history or prehistory?	___	X	___
*2. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	___	X	___
*3. Does the project have possible environmental effects which are individually limited, but cumulatively considerable? (Analyze in the light of past projects, other current projects, and probable future projects?)	X	___	___
*4. Would the project cause substantial adverse effects on human beings, either directly or indirectly?	___	X	___
*5. Is there a serious public controversy concerning the possible environmental effect of the project?	___	X	___

On the basis of this initial evaluation:

____ I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared by the Department of City Planning.

____ I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because the mitigation measures, numbers____, in the discussion have been included as part of the proposed project. A NEGATIVE DECLARATION will be prepared.

✓ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Robert W. Passmore
Assistant Director-Implementation

for

Dean L. Macris
Director

Date: 5/12/81

SUMMARY OF SIGNIFICANT AND INSIGNIFICANT ENVIRONMENTAL EFFECTS

Potential environnmental issues resulting from the proposed project include visual considerations due to the height and bulk of the proposed structure, possible conflict with General Plan, obstruction of views, impacts upon employment, population and housing, freight access problems resulting from proposed vehicular restrictions on Steuart Street, cumulative effects on transportation systems and parking, noise impacts during construction and operation, cumulative impacts on air quality, effects of shadows, dewatering, energy demand, geology and seismicity, effects on archaeological, historical and architectural resources, and cumulative impacts of downtown office growth on services. These issues will be addressed in the focused EIR.

Potential environmental issues of the proposed project that have been determined to be insignificant are land use compatibility, glare, relocation or displacement of housing or businesses, objectionable odors, burning of materials, utilities and public services, biology, and hazards. These issues will not be discussed in the EIR.

SIGNIFICANT ISSUES

The proposed project may conflict with some objectives and policies set forth in the Comprehensive Plan. The site is zoned C-3-S District: Downtown Support, by the City Planning Code, which specifically states that the eastern area in which the site is located serves in part as an expansion area for offices, at a lesser intensity than in the Downtown Office district. The proposed project would conform with Objective 6 of the Commerce and Industry Element of the Comprehensive Plan to "maintain and improve San Francisco's position as a prime location for financial, administrative, corporate and professional activity". (A.1).

The Transportation Element of the Comprehensive Plan designates Howard, Steuart and Folsom Streets as major thoroughfares. Mission Street, one block to the north of the site, is termed a transit preferential street. The

Transportation Plan for downtown and vicinity proposes the square block on which the site is located as a parking belt. Long and short-range parking requirements are defined further in the 1977 "Revisions to the Transportation Element of the Master Plan Regarding Parking". (A.1).

The project may not conform with some aspects of the Plan for the Northeastern Waterfront regarding circulation and transportation. The 1980 Amendments to the Plan enumerate policies for the Embarcadero Roadway which may preclude the proposed project from using Steuart Street for freight access. Policy 1.b. states "Realign the Embarcadero Roadway between Broadway and Berry Street as follows:

". . . b. Reroute the roadway inland to Steuart Street from Howard to Harrison Streets to reduce its impact on the waterfront and to create opportunities for water-related activities." Further, Policy 2 regarding the Freight Rail Line states "From Howard Street, relocate the Beltline Railroad to Steuart Street to reduce its impact on the waterfront and create water-related activities." The issue of freight access from Steuart Street will be addressed in the EIR. (A.1).

The 18-story structure may partially obstruct views from adjacent or nearby buildings. At the present time The Embarcadero Freeway represents a visual barrier. Assuming the elevated freeway is removed, the proposed project would be visible in both long-range views and short-range views from the Rincon Point-South Beach Redevelopment Area, particularly from the proposed waterfront park to the east and the proposed hotel/housing immediately to the south. (B.2).

The proposed project, in combination with other projects of a similar height and bulk (Spear and Main, 150 Spear, 101 Mission) could result in "benching" of the skyline. The low base does not contribute to a defined street space. A visual analysis will be included in the EIR to ensure compliance with the Urban Design Element. (B.2).

The proposed project would increase the daytime work force by approximately 1,030 persons upon completion. A total of 321 person/years of construction employment would be generated over the 20-month construction period. (B.3).

The proposed project may be viewed as growth-inducing as it would be an employment generator resulting in direct effects, including increased demand for housing and services and additional demands on streets and transit systems. Analysis of growth inducing effects and cumulative office growth in the vicinity will be provided in the EIR. (B.3).

An increase in Muni and regional transit patronage would occur and additional automobile trips would be attracted to the site. Project generated traffic will be analyzed in relation to existing loads and street capacity. The analysis will consider cumulative impacts of this and other downtown developments on the street system. Project-generated and cumulative impacts on transportation systems will be analyzed in the EIR. (B.4).

The existing 142-space surface parking lot would be removed, resulting in a net loss of public parking in this vicinity. Fifty-six spaces would be provided subsurface for tenants and visitors. The impacts of this project and the cumulative effects of other downtown developments on parking supply and demand will be addressed in the EIR. (B.4).

The current site design indicates freight access would be taken from Steuart Street. Policies in the Northeastern Waterfront Plan and comments from Muni and the Transportation Policy Group indicate that the proposed freight access is inappropriate as truck movement would conflict with the proposed Muni/Metro and E-Line operation on Steuart Street. Muni and the Transportation Policy Group recommend that all vehicular access be on Spear Street. These issues need further evaluation which will be included in the EIR. (B.4).

There could be possible pedestrian and transit hazards from freight loading since there may not be a street. (B.4).

A change in configuration of existing streets or increased maintenance in conjunction with the proposed project is not anticipated; however, the I-280 withdrawal and Concept Plan, which could include tear-down of the Embarcadero Freeway, may result in impacts upon the proposed project. Although the 18-story structure would be 70 to 78 feet from the Freeway at the closest point, demolition could result in a potential conflict. A comparison of the construction phase with The Embarcadero teardown will be made in the EIR. (B.4).

The Transportation Noise Element of the Comprehensive Plan indicates that the site is exposed to background noise levels of 65 Ldn and thoroughfare noise levels of 70 to 80 Ldn (1974). Project-generated noise levels would be limited to construction noise and, upon completion, noise generated by mechanical equipment associated with the building. (B.5).

Possible noise from The Embarcadero Freeway, which is approximately 75 feet from the proposed structure at the closest point could impact the project. (B.5).

The EIR will analyze noise associated with construction and operation of the project as well as project traffic and noise emanating from The Embarcadero Freeway. (B.5).

The construction phase of the proposed project would generate short-term impacts on air quality. The completed project would have cumulative impact on regional air quality due to an increase in Vehicle Miles Traveled. Mitigation measures for construction impacts on air quality, analysis of cumulative air quality impacts and shadow studies will be included in the EIR. (B.6).

There would be increased consumption of energy during construction and life of the project. Energy usage by the proposed project would be comparable to existing downtown office structures. The EIR will analyze and quantify energy usage associated with the proposed project. (B.11).

Preliminary geotechnical studies for Phase I of the proposed project were conducted by Harding-Lawson Associates. Their report indicated that a number of test borings had already been drilled at the site in 1966 and 1974.

Subsurface conditions encountered in the borings consisted of loose fill underlain by soft compressible clays commonly referred to as Bay mud. Bedrock was encountered from Elevation -60 to -70, while groundwater was found in all borings and stabilized at about Elevation -10 feet. (B.9).

Piles would be required to support the steel frame structure, with the expectation that they would penetrate about 3 to 5 feet into bedrock before achieving a satisfactory refusal blow count. It is expected that piles driven to refusal into the bedrock would experience negligible settlement. (B.9).

The site is currently graded and would require removal of asphalt paving prior to project construction. No buildings would be removed as the site is vacant. Additional discussion of geology and seismicity will be included in the EIR. (B.9).

The proposed project site is at approximately Elevation 0, San Francisco Datum. The groundwater table is stable at approximately Elevation -10 feet SFD in artificial fill.[1] Inclusion of one level of subsurface parking would require excavation to Elevation -20 SFD, the approximated level of the base of the existing fill.[2] An additional 10 feet of excavation would be required beneath the elevator shaft. (B.10).

An open excavation in water-bearing material requires adequate drainage control during construction. The project architect's outline specifications indicate that a complete site dewatering system would be provided as required to maintain excavated areas free from water throughout progress of work. This consists of drilling a number of properly spaced wells which are occasionally pumped out to lower the water table beneath the site to a level below the lowest point of excavation.[3] Wall slump within the excavation is prevented

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[1]Rollo, Frank L., Civil Engineer - 18126 for Harding-Lawson Associates, letter to Mr. Clifton Brinkley, Construction Manager, One Market Plaza, 3 October 1980.

[2]Lee and Praszker, Geotechnical Input for EIR on 101 Mission Street, San Francisco, July 1980, page 3.

[3]Legget, Robert F., Geology and Engineering, 2nd Ed. McGraw-Hill Book Company, Inc., San Francisco, 1962, page 358.

by the sheet piling (or additional shoring systems) which also isolates the excavation from the areal groundwater regimen. This hydrologic isolation would prevent loss of soil support from uncontrolled seepage beneath nearby structures.[1] The EIR will address dewatering and the protection of adjacent structures. (B.10).

A report entitled "Architectural/Historical Statement for an Environmental Impact Report on a Proposed 18-story Office Building for the Southeast Corner of Spear and Howard Streets" was submitted by Sally B. Woodbridge, Architectural Historian. The report concluded that the proposed structure would not have an impact upon structures of architectural or historical merit. Although the site is presently vacant and paved over, it has been repeatedly disturbed by construction. Buildings which formerly occupied the site were constructed on pilings which remain in the subsurface material, reducing the likelihood that undisturbed "sunken ships" or significant archaeological artifacts would be found. Over the years a number of test borings have been drilled in the site indicating it is composed of Bay mud and alluvium over bedrock, which was encountered at -60 to -70 feet. (B.13).

If artifacts are uncovered in the course of construction the project sponsor will halt construction until a qualified professional examines the finds. The EIR will analyze archaeological and cultural issues in greater detail (B.13).

Cumulative impacts of downtown office growth on services will be analyzed in the EIR. (E.3).

INSIGNIFICANT ISSUES

The project conforms to the existing C-3-S zoning, but it would require a building permit. Through Resolution 8474, the City Planning Commission requires discretionary review of building permit applications in the downtown (C-3) area. The City Planning Commission has exercised this power of discretionary reivew as part of its interim controls on downtown development while comprehensive revisions to downtown zoning are being completed. (A.1, A.2).

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[1] Legget, Robert F., The Wellpoint System; Application to an Excavation in Waterlogged Ground in Canada, Civil Engineering, London, 1936, Vol. 31, page 229.

Land uses surrounding the project site are described in Project Description. No community disruption is anticipated in an area of parking and commercial/ office uses. Pedestrians would be provided with a landscaped environment on the ground level, as compared with the existing asphalt parking lot. (B.1).

The architect would be using non-reflective solar bronze glass to mitigate impacts from glare and reflective surfaces, that might otherwise effect the freeway. (B.2).

The project site is currently vacant and used as a surface parking lot. No relocation is involved in clearing the site. (B.3).

Title 25 Noise Insulation Standards are not applicable as they apply only to new, multi-family residential construction. (B.5).

It has not been determined that sensitive receptors exist in the vicinity of the proposed project. No objectionable odors are likely to occur from construction or operation of a highrise office structure. No materials would be burned. (B.6).

Donald Ballanti, Certified Consulting Meteorologist, reviewed the project to determine the potential for adverse ground level wind effects. It was found that the site is sheltered by existing highrise buildings from the prevailing northwest and west wind directions. The proposed plaza would be located on the downwind side of the structure and would have good solar access. Mr. Ballanti concluded that "the project does not appear to have the potential for causing adverse wind conditions for pedestrians. Wind tunnel tests of the structure do not appear to be justified at this time." (Donald Ballanti, Wind Evaluation, dated 21 March 1981 is attached.) (B.6).

As this building will be over 75 feet in height, it must conform to all requirements of Article 18 of the San Francisco Building Code. One of the requirements is that a minimum of 750 gpm of water will have to be supplied from the Water Department main in the street to the building fire pumps (this minimum water supply is required for the 2 mandatory standpipes; each

additional standpipe will require an additional 250 gpm. Once the architect has determined the number of standpipes the building will have, he shall then contact the Water Department to verify that they can provide the required flow from the existing facilities or to make arrangements for the Water Department to provide a larger main. (B.7).[1]

Implementation of the project could generate more resuscitation (rescue and first aid) calls than previously experienced at the site. The proposed project would not require additional manpower or equipment. (B.7).

The project is not expected to generate the need for additional police services. The area is currently served by 24-hour patrol cars, there is no foot beat. Crime is low in the project area; however, the increasing development of office buildings could cause an increase in the number of commercial burglaries in the vicinity. (B.7).[2]

The 1,000-1,300 people expected to be employed at the proposed building could use those parks within walking distance, such as Justin Herman Park and South Park. The Port Authority, in addition to the Recreation and Park Department, has open spaces in the vicinity along The Embarcadero. These parks are currently heavily used by office workers during the lunch period. (B.7).[3]

PG&E would provide utility service to the project from facilities existing on Spear and Howard Streets. No difficulty is expected in meeting project service demand. (B.7).[4]

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[1]Joseph A. Sullivan, Assistant Chief, Support Services, San Francisco Fire Department, letter, 28 April 1981.

[2]James Farrell, Sargeant, Crime Analysis, San Francisco Police Department, telephone conversation, 23 April 1981.

[3]Jim Rogers, Assistant Superintendent of Parks, San Francisco Department of Recreation and Parks, telephone communication, 24 April 1981.

[4]George Pravana, Industrial Power Engineer, Pacific Gas and Electric Company, telephone communication, 24 April 1981.

No telephone facilities exist at the site. Application has been made, however, to service the site with a new conduit along Spear Street from Folsom Street and a manhole in front of the proposed 201 Spear Office Building. Construction of these facilities could take up to 1 month and could disrupt traffic flow or reduce parking spaces during that period. (B.7.).[1]

An 8-inch low-pressure water main runs under Spear Street and a 6-inch low pressure line exists under Howard Street. These lines are supplied water from the 140 million gallon capacity reservoir at University Mound (northeast of McLaren Park). Water consumption due to the project is estimated at 31,981 gallons per day.[2] Water pressure and supply are adequate to serve the proposed project. (B.7.).[3]

The proposed 18-story office building would generate approximately 32,000 gpd dry weather flow. The 3-foot by 5-foot brick sewer on Spear between Howard and Folsom and the 7-foot circular main on Howard between Main and Spear would transport sewage to the North Point Water Pollution Control Plant; these facilities are capable of accommodating the flow generated by the project. The Southwest Water Pollution Control Plant upon completion would receive flows from the project area. (B.7.).[4]

Golden Gate Disposal Company services the project area and would have no difficulty in providing services to the proposed project which would generate

---

[1]Al Potocny, Facilities Engineer, Pacific Telephone and Telegraph Company, telephone conversation, 23 April 1981.

[2]Office use of 125 gallons per 1,000 square feet of usable floor space, Brown & Caldwell Consulting Engineers, 1972, Report on Wastewater Loading From Selected Development Areas, as cited in San Francisco Department of City Planning, Final Environmental Impact Report, Daon Building, EE 79.57 Certified, 12 June 1980.

[3]George Nakagaki, Assistant Manager, San Francisco Water Department, telephone conversation, 23 April 1981.

[4]Nat Lee, Engineer, Division of Sanitary Engineering, San Francisco Clean Water Program, telephone conversation, 23 April 1981.

1¼ tons of solid waste daily.[1] The disposal company recommends that space for a stationary compactor be incorporated into the building design. The 8-10 ton capacity compactor would require dumping once a week, thereby reducing labor costs. Seven to 10 dumpsters would be picked up each day. Currently, waste is taken to the Tunnel Avenue dump; this facility has a 2½ year capacity. Future sites are located in Mountain View and Vacaville. (B.7).[2]

The project site is currently paved with asphalt and is frequented only by urban species. (B.8).

The site is currently subject to nearly 100% runoff since the surface has been rendered impermeable by an asphalt surfaced parking lot. Mean annual runoff is approximately 4 inches.[3] It appears from the plan views of the proposed project that the hydrologic regimen of the site would be slightly altered by the addition of approximately 3,000 square feet of landscaped terrace. This would increase runoff retention time by no more than 4% by directly absorbing a similar percentage of rainfall at the site. The control of site runoff should not present a problem for the City storm sewer system since (1) total site runoff would, at greatest, be the same as it is now, or a few percent less, and (2) adequate drainage facilities would be provided as required by the City. (B.10).

MITIGATION MEASURES

A number of mitigation measures have been included in the project as designed to date. They are described below. Further mitigation measures will be presented for each area of identified impact in the EIR.

---

[1] Total gross sq. ft. x 1 pound per 100 gross square feet per day = pounds per day. State of California Solid Waste Management Board, 1974 "Solid Waste Generation Factors in California."

[2] Fiore Garbarino, Office Manager, Golden Gate Disposal Company, telephone conversation, 23 April 1981.

[3] Ranz, S.E., Mean Annual Runoff in the San Francisco Bay Region, California 1931-1970, U.S. Geological Survey Misc. Field Study MF-613, Washington, D.C. 1974, scale 1:500,000.

1. Design of the building includes precast concrete exterior wall panels faced with brick to reflect the use of brick in the Folger Building located opposite the site.

2. The facade of the building would be articulated by shaded windows offset at a 30° angle to the facade to add visual interest to the building.

3. The architect would use a non-reflective solar bronze glass to mitigate impacts from glare and reflective surfaces.

4. The pedestrian level would feature street trees, a landscaped plaza with flowering shrubs and pedestrian seating. Brick pavers would be used for the plaza and sidewalks to the curb.

5. The landscaped plaza oriented to the south to maximize solar access.

6. A handicapped ramp curb cut will be constructed at the corner of Howard and Spear Streets.

7. A complete site dewatering system would be provided as required to maintain excavated areas free from water throughout progress of work.

8. The project would comply with minimum energy use requirements of Title 24 of the California Administrative Code.

ALTERNATIVES

The following alternatives will be included for discussion in the EIR:

1. An office structure with a 6:1 Floor Area Ratio which incorporates applicable issues outlined in the April 1981 draft of "Guiding Downtown Development."

2. Commercial uses other than office.

3. Multi-family residential for at least 1/3 of the floor area.

4. A building design which considers skyline effects - avoiding benching by using a transitional stepping-up design.

5. Restricting all vehicular access to Spear Street.

6. The no-project alternative.

Donald Ballanti
Certified Consulting Meteorologist

1424 Scott Street
El Cerrito, Ca. 94530
(415) 234-6087

March 21, 1981

Environmental Impact Planning Corp.
319-11th Street
San Francisco, CA 94103
Attn: Linda Pierce

Subject: Wind Evaluation for the 201 Spear Office Building

Dear Ms. Pierce:

At your request I have undertaken a review of the subject project to determine the potential for adverse ground-level wind effects. The letter summarizes my findings and recommendations, which are based on a site visit and a review of project plans.

The proposed project site is the northeast corner of the Howard/Spear Street intersection. The 18-story structure would be rectangular in shape with a serrated building surface. The long axis of the building would be oriented northwest-southeast. A landscaped plaza would be located on the southeast side of the highrise.

The project is located in an area downwind of the highrise corridor along Market Street. The area has been found in wind tunnel tests to be partially sheltered by these highrises. Additionally, the site is generally downwind of several newer highrises built or under construction near the Howard/Spear streets intersection. The block due west of the site, across Spear Street, includes two highrise structures of 16 and 18 stories that shelter the site from westwinds. The block to the northwest across the Howard/Spear intersection includes two new highrises of 9 and 13 stories and another under construction at 18 stories. The site, therefore, is sheltered by existing buildings from the prevailing northwest and west wind directions.

The project design is one that would normally generate wind accelerations at ground level if the building were free standing. The shelter provided by existing structures reduces the potential for this effect greatly, however. The plaza is well located on the downwind side of the structure and with good solar access.

In summary, the project does not appear to have the potential for causing adverse wind conditions for pedestrians. Wind tunnel tests of the structure do not appear to be justified at this time.

If you have any questions concerning my findings or need more information, please call.

Sincerely,

Donald Ballanti

Donald Ballanti,
Certified Consulting Meteorologist

DISTRIBUTION LIST

REGIONAL AGENCIES

Association of Bay Area
Governments
Hotel Claremont
Berkeley, California 94705

Bay Area Air Quality
Management District
939 Ellis Street
San Francisco, California 94109

Bay Area Rapid Transit District
800 Madison Street
Oakland, California 94607

Golden Gate Bridge Highway
& Transportation District
P.O. Box 9000, Presidio Sta.
San Francisco, California 94129

Metropolitan Transportation
Commission
Hotel Claremont
Berkeley, California 94705

San Mateo County Transit
District
400 South El Camino
San Mateo, California 94402

CITY AND COUNTY OF SAN FRANCISCO

Bureau of Engineering
Mechanical Section
45 Hyde Street, Rm. 222
San Francisco, California 94102
Attention: Mr. Danehy

Water Department
Distribution Division
425 Mason Street
San Francisco, California 94102
Attention: John Kenck, Manager

San Francisco Fire Department
260 Golden Gate Avenue
San Francisco, California 94102
Attention: Robert Rose, Chief
Division of Planning
and Research

San Francisco MUNI
Planning Division
949 Presidio Avenue, Rm. 204
San Francisco, California 94115
Attention: Susan Chelone

San Francisco Police Department
850 Bryant Street
San Francisco, California 94103
Attention: Cornelius Murphy, Chief

San Francisco Department of
Public Works
Traffic Engineering Division
460 McAllister Street
San Francisco, California 94102
Attention: William Marconi
Scott Shoaf

MEDIA

San Francisco Chronicle
925 Mission Street
San Francisco, California 94103
Attention: Marshall Kilduff

San Francisco Examiner
110 5th Street
San Francisco, Califronia 94103
Attention: Gerald Adams

San Francisco Progress
815 Howard Street
San Francisco, California 94103
Attention: Mike McWhinney

GROUPS & INDIVIDUALS

AIA
Northern California Chapter
790 Market Street
San Francisco, California 94102

Corwin Booth / Jack Courshan
221 Main Street
San Francisco

Building Owners and Managers
Association
68 Post Street
San Francisco, California 94104
Attention: Elmer Johnson

Building Service Employees Union
Local 87
240 Golden Gate Avenue
San Francisco, California 94102

Charles Hall Page And Associates
364 Bush Street
San Francisco, California 94104

Downtown Senior Social Services
295 Eddy Street
San Francisco, California 94102

Downtown Association
582 Market Street
San Francisco, California 94104
Attention: Lloyd Pflueger, Mgr.

Environmental Science Associates,
Inc.
1291 E. Hillsdale Blvd.
Foster City, California 94404

The Foundation for San Francisco's
Architectural Heritage
2007 Franklin Street
San Francisco, California 94109
Attention: Ellen Ramsey
Executive Director

Friends of the Earth
124 Spear Street
San Francisco, California 94105
Attention: Connie Parrish

Gray Panthers
944 Market Street
San Francisco, California 94102
Attention: W. Nunnally

Sue Hestor
4536 - 20th Street
San Francisco, California 94114

Junior Chamber of Commerce
251 Kearny Street
San Francisco, California 94108

League of Women Voters
12 Geary Street, Rm. 605
San Francisco, California 94108

Legal Assistance to the Elderly
944 Market Street, Rm. 803
San Francisco, California 94102

Kenneth Lubin
211 Main Street
San Francisco, California

Main Tower Co.
221 Main Street
San Francisco, California

San Francisco Beautiful
41 Sutter Street
San Francisco, California 94104
Attention: Mrs. H. Klussman
President

San Francisco Building and
Construction Trades Council
400 Alabama Street, Rm. 100
San Francisco, California 94110
Attention: Stanley Smith

San Francisco Chamber of Commerce
456 Montgomery Street
San Francisco, California 94102
Attention: Richard Morton

San Francisco Ecology Center
13 Columbus Avenue
San Francisco, California 94111

San Francisco Labor Council
3058 - 16th Street
San Francisco, California 94103
Attention: Bernard Speckman

San Francisco Planning and
Urban Renewal Association
312 Sutter Street
San Francisco, California 94108

San Francisco Convention and
Visitors Bureau
1390 Market Street, Suite 260
San Francisco, California 94102
Attention: George D. Kirkland
Executive Director,
D. Hess, General Mgr.

San Francisco Tomorrow
728 Montgomery Street, Rm. 34
San Francisco, California 94111
Attention: Suzanne Smith

San Franciscans for Reasonable
Growth
9 First Street
San Francisco, California 94105
Attention: Carl Imperato

Senior Escort Program
South of Market Branch
814 Mission Street
San Francisco, California 94103
Attention: Leslie Halford
Neighborhood Coordinator

Sierra Club
530 Bush Street
San Francisco, California 94105
Attention: Becky Evans

Martin Tapland
101 Howard Street
San Francisco, California

Tenant & Owners Development
Corporation
177 Jessie Street
San Francisco, California 94105
Attention: John Elberling

West Spear Street Investment Co.
900 Cherry Avenue, Suite 200
San Bruno, California

Women's Chamber of Commerce
681 Market Street, Rm. 992
San Francisco, California 94105

APPENDIX B

INTERSECTION CAPACITY ANALYSIS AND LEVEL OF SERVICE DEFINITIONS

ource: Service Level Calculations performed by George W. Nickelson

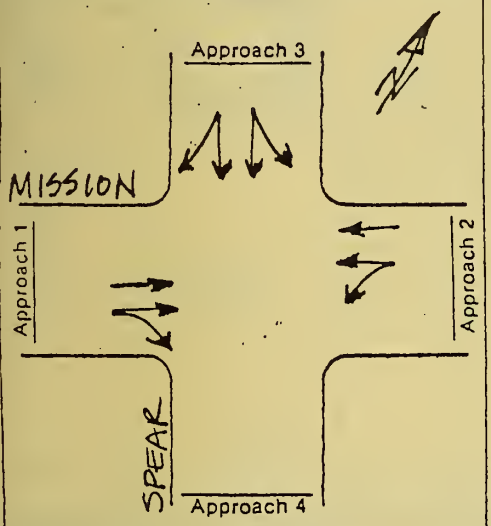
INTERSECTION CAPACITY ANALYSIS 4:30-5:30pm

Intersection MISSION / SPEAR Design Hour P.M. PEAK

Other Conditions EXISTING TRAFFIC

(COUNT CONDUCTED ON 16 JULY 1980)

1. Identify Lane Geometry



4. Left Turn Check

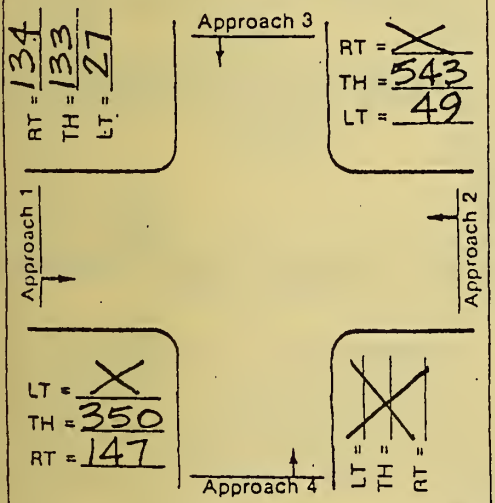
	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

6b. Volume Adjustment for Multiphase Signal Overlap

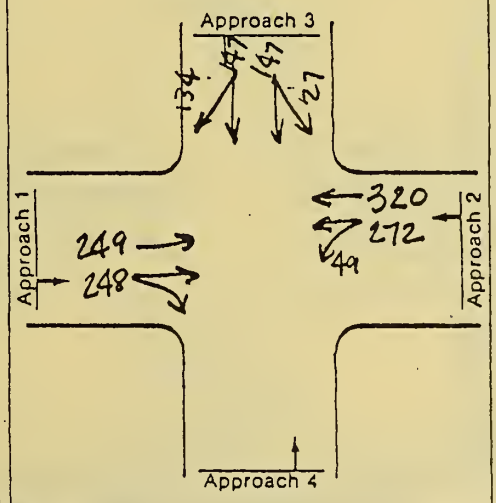
Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

2 ϕ

2. Identify Volumes, in vph



5. Assign Lane Volumes, in vph



7. Sum of Critical Volumes

147 + 320 + — + —

= 467 vph

8. Intersection Level of Service

A

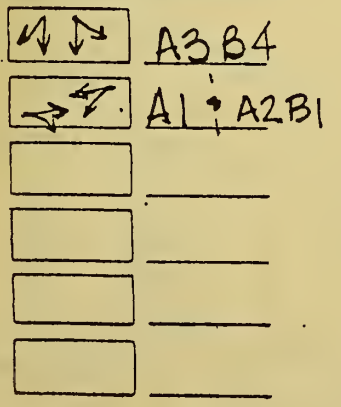
9. Recalculate

Geometric Change _____

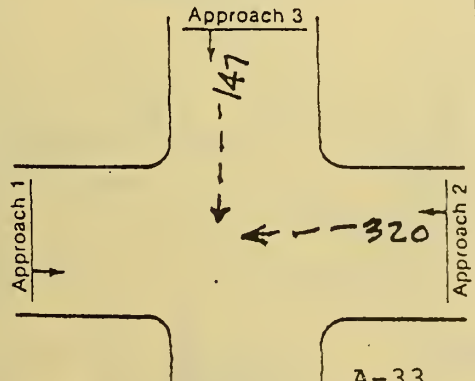
Signal Change _____

Volume Change _____

3. Identify Phasing



6a. Critical Volumes, in vph (two phase signal)



Service Level Ranges

Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

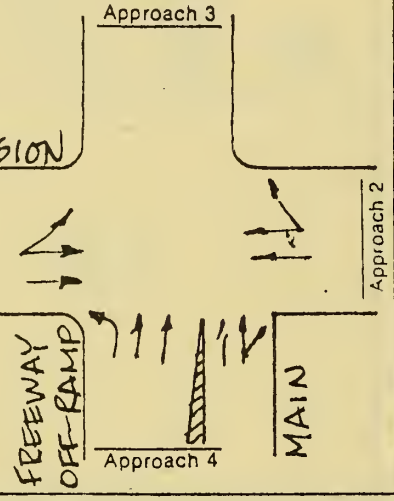
INTERSECTION CAPACITY ANALYSIS

7:30-8:30 AM

Intersection MISSION / MAIN Design Hour A.M. PEAK

Other Conditions EXISTING TRAFFIC
(COUNT CONDUCTED ON 30 APRIL 1981)

1. Identify Lane Geometry



4. Left Turn Check

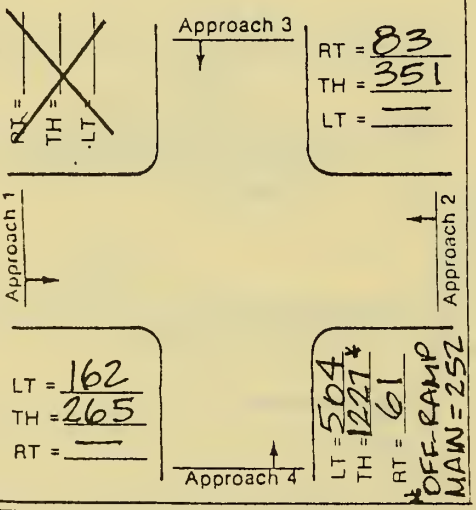
	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

6b. Volume Adjustment for Multiphase Signal Overlap

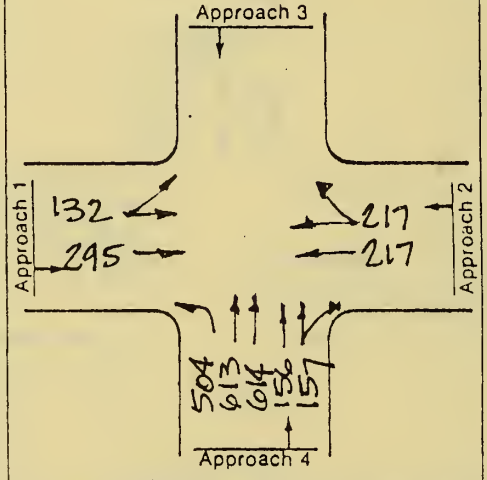
Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

2 ϕ

2. Identify Volumes, in vph



5. Assign Lane Volumes, in vph



7. Sum of Critical Volumes

614 + 217 + 162 + —

= 993 vph

8. Intersection Level of Service

B

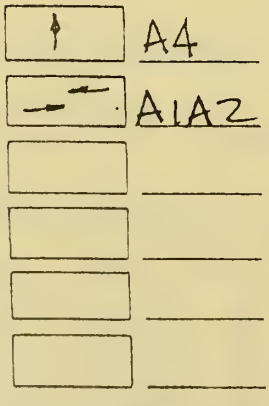
9. Recalculate

Geometric Change _____

Signal Change _____

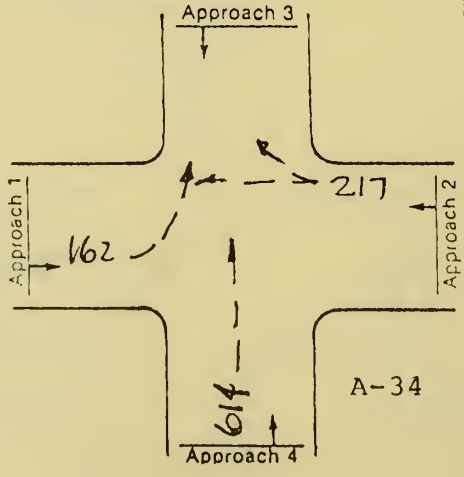
Volume Change _____

3. Identify Phasing



A1 → A3 ↓	B1 ↱ B3 ↰
A2 ← A4 ↑	B2 ↳ B4 ↳

6a. Critical Volumes, in vph (two phase signal)



Service Level Ranges

Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

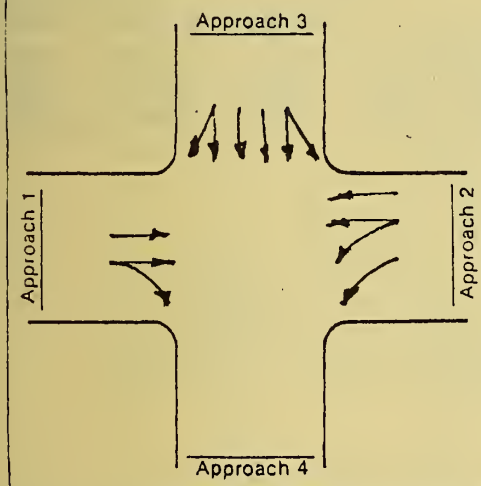
INTERSECTION CAPACITY ANALYSIS

4:30-5:30pm

Intersection MISSION / BEALE Design Hour P.M. PEAK

Other Conditions EXISTING TRAFFIC
(COUNT CONDUCTED ON 2 FEBRUARY 1981)

1. Identify Lane Geometry



4. Left Turn Check

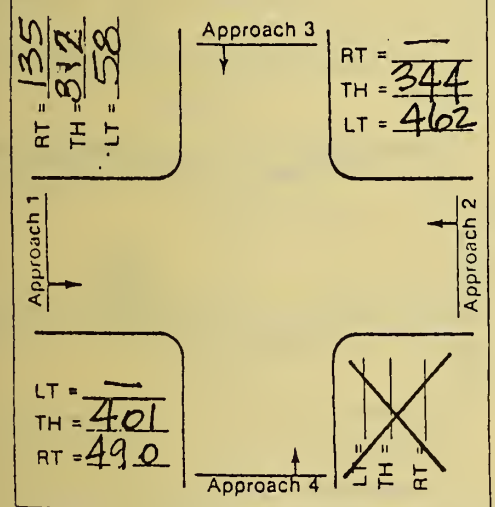
	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

6b. Volume Adjustment for Multiphase Signal Overlap

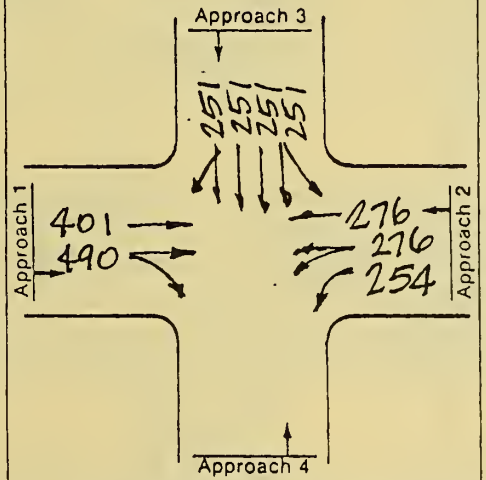
Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

3Ø

2. Identify Volumes, in vph



5. Assign Lane Volumes, in vph



7. Sum of Critical Volumes

490 + 251 + 276 + —

= 1017 vph

8. Intersection Level of Service

C

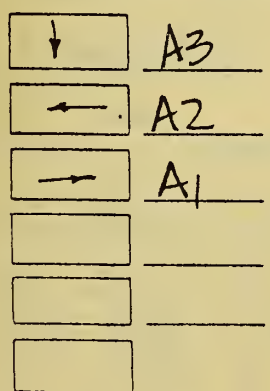
9. Recalculate

Geometric Change _____

Signal Change _____

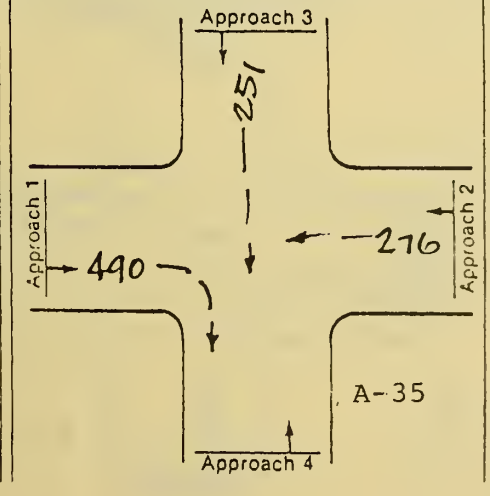
Volume Change _____

3. Identify Phasing



A1 →	A3 ↓	B1 ←	B3 ↑
A2 ←	A4 ↑	B2 →	B4 ↓

6a. Critical Volumes, in vph (two phase signal)



A-35

Service Level Ranges

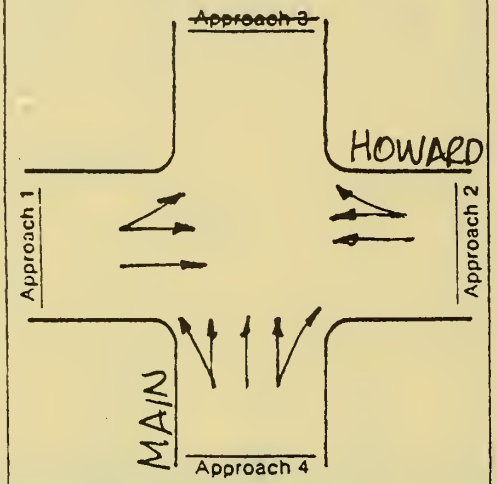
Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

INTERSECTION CAPACITY ANALYSIS

Intersection HOWARD / MAIN Design Hour P.M. PEAK 4:30-5:30 pm.

Other Conditions EXISTING TRAFFIC VOLUMES
(COUNT CONDUCTED ON 30 OCTOBER 1980)

1. Identify Lane Geometry



4. Left Turn Check

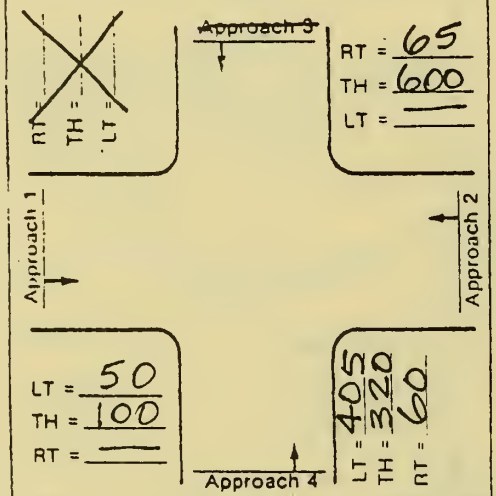
	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

6b. Volume Adjustment for Multiphase Signal Overlap

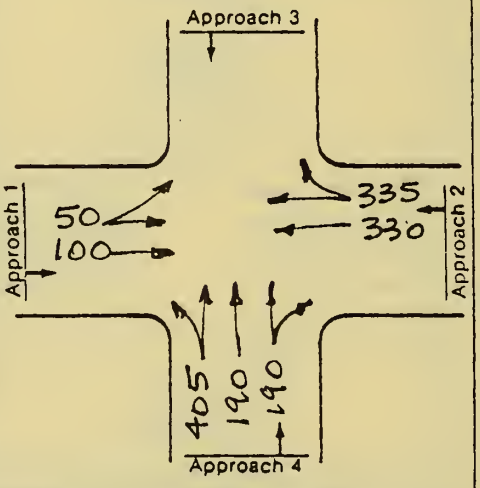
Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

2φ

2. Identify Volumes, in vph



5. Assign Lane Volumes, in vph



7. Sum of Critical Volumes

50 + 335 + 405 + — = 790 vph

8. Intersection Level of Service

A

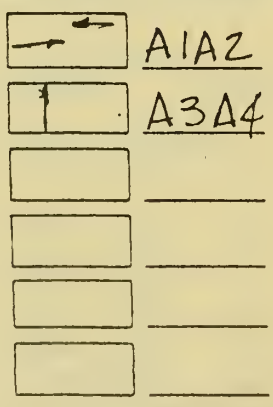
9. Recalculate

Geometric Change _____

Signal Change _____

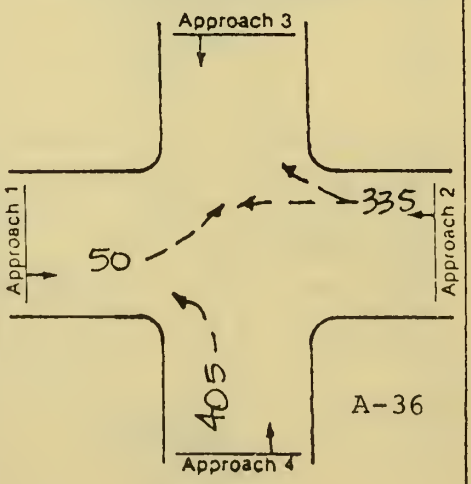
Volume Change _____

3. Identify Phasing



A1 →	A3 ↓	B1 ↱	B3 ↰
A2 ←	A4 ↑	B2 ↳	B4 ↲

6a. Critical Volumes, in vph (two phase signal)



Service Level Ranges

Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

LEVELS OF SERVICE DEFINITIONS FOR SIGNALIZED INTERSECTIONS

Level of Service A

Level of Service A describes a condition where the approach to an intersection appears quite open and turning movements are made easily. Little or no delay is experienced. No vehicles wait longer than one red traffic signal indication. The traffic operation can generally be described as excellent.

Level of Service B

Level of Service B describes a condition where the approach to an intersection is occasionally fully utilized and some delays may be encountered. Many drivers begin to feel somewhat restricted within groups of vehicles. The traffic operation can generally be described as very good.

Level of Service C

Level of Service C describes a condition where the approach to an intersection is often fully utilized and back-ups may occur behind turning vehicles. Most drivers feel somewhat restricted but not objectionably so. The driver occasionally may have to wait more than one red traffic signal indication. The traffic operation can generally be described as good.

Level of Service D

Level of Service D describes a condition of increasing restriction causing substantial delays and queues of vehicles on approaches to the intersection during short times within the peak period. However, there are enough signal cycles with lower demand such that queues are periodically cleared, thus preventing excessive back-ups. The traffic operation can generally be described as fair.

Level of Service E

Capacity occurs at Level of Service E. It represents the most vehicles that any particular intersection can accommodate. At capacity there may be long queues of vehicles waiting upstream of the intersection and vehicles may be delayed up to several signal cycles. The traffic operation can geenrally be described as poor.

Level of Service F

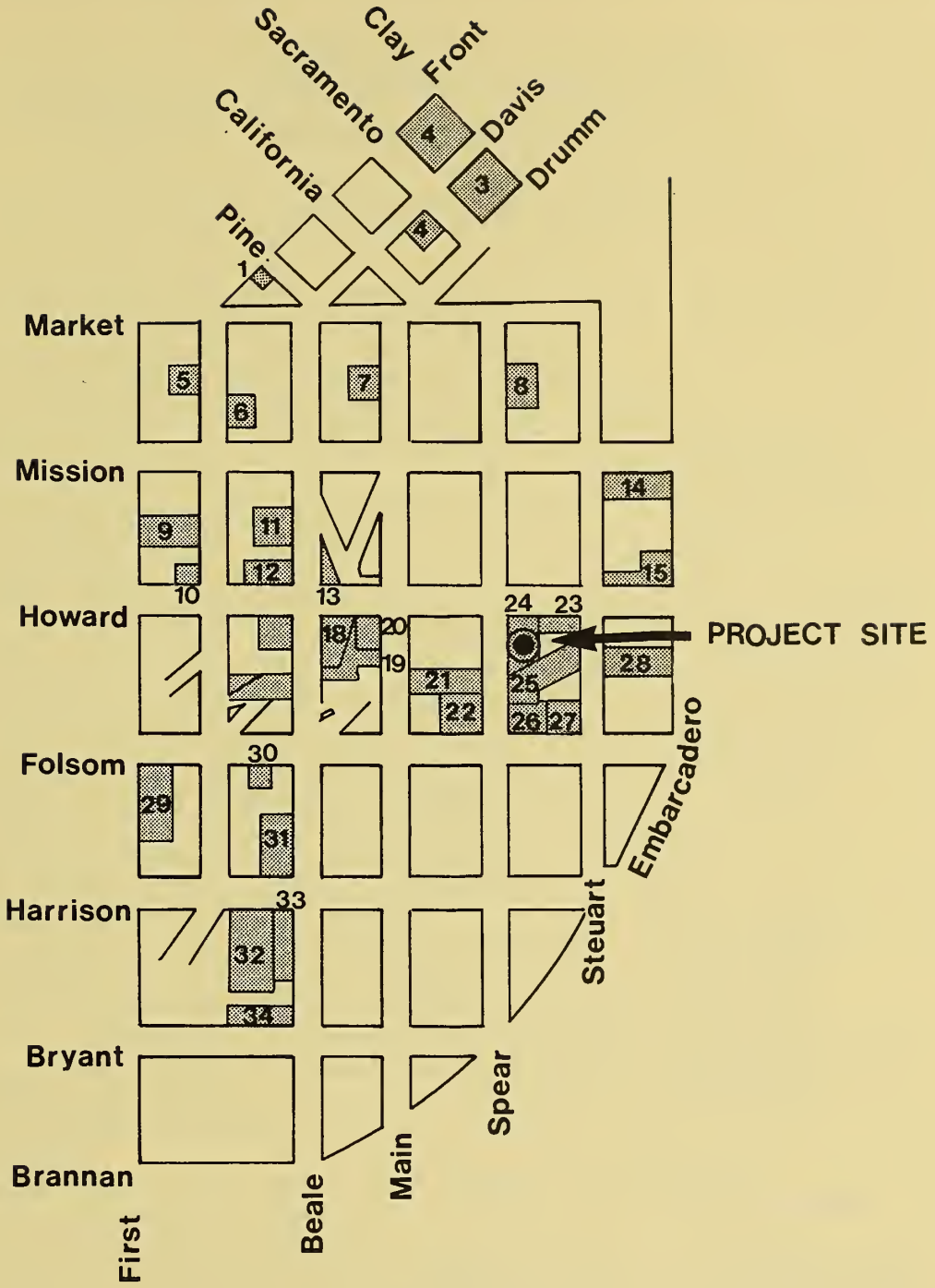
Level of Service F represents a jammed condition. Backups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration. Hence, volumes of vehicles passing through the intersection vary from signal cycle to signal cycle. Because of the jammed condition, this volume would be less than capacity.

PARKING SURVEY INFORMATION

Lot[1] No.	Public Spaces	Occupied	Rate Structure	Short/Long Term[2]
1	38	38	$2.00/half-hour, $8 max.	short
2	661	661	$1.25/half-hour, $8 max.	short
3	419	369	$1.40/20 min., $10 max.	short
4	90	72	$1.40/20 min., $10 max.	short
5	76	76	$1.25/half-hour, $8 max.	short
6	52	52	$1.25/half-hour, $8 max.	short
7	250	240	$1.25/half-hour, $7.50 max. and monthly	short/long
8	140	110	$1.50 half-hour	short
9	117	117	$3.00/day	long
10	125	88	$4.00/day	long
11	130	115	$1.00/20 min., $6 max.	short
12	215	180	$.75/20 min., $5 max.	short/long
13	150	150	$.75/20 min., $5 max.	short/long
14	60	60	$3.50 max.	long
15	75	75	$3.00/day	long
16	77	77	monthly	long
17	75	59	$3.50/day	long
18	120	110	$3.50 max.	long
19	64	57	monthly	long
20	87	80	$3.50 max.	long
21	55	55	$3.00/day	long
22	135	135	$2.75/day	long
23	142	85	$1.00/20 min., $5.50 max.	short
24	150	150	$3.50/day	long
25	150	150	$3.50 max.	long
26	200	150	$3.00 max.	long
27	48	48	$3.00 max.	long
28	100	80	$3.50 max.	long
29	108	108	$2.00/day	long
30	27	24	monthly	long
31	73	71	$2.00/day	long
32	125	122	$2.00/day	long
33	110	109	$1.50/day	long
34	90	89	$1.50/day	long
	4534	(92%)		

[1]For lot location, see figure next page.

[2]Assumes long-term is $4.00/day or less, others are short-term or a combination of short- and long-term.



Parking Survey

Parking Lots and Garages

North

Not to Scale

201 SPEAR

Source: E.I.P. Corp.

Figure No. B-1

APPENDIX C

FUNDAMENTAL CONCEPTS OF ENVIRONMENTAL NOISE

Charles M. Salter Associates, Inc.

This section provides background information to aid in understanding the technical aspects of this report.

Three dimensions of environmental noise are important in determining subjective response. These are:

a. the intensity or level of the sound;
b. the frequency spectrum of the sound;
c. the time-varying character of the sound.

Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. Sound levels are usually measured and expressed in decibels (dB), with 0 dB corresponding roughly to the threshold of hearing.

The "frequency" of a sound refers to the number of complete pressure fluctuations per second in the sound. The unit of measurement is the cycle per second (cps) or Hertz (Hz). Most of the sounds which we hear in the environment do not consist of a single frequency, but of a broad band of frequencies, differing in level. The quantitative expression of the frequency and level content of a sound is its sound spectrum. A sound spectrum for engineering purposes is typically described in terms of octave bands which separate the audible frequency range (for human beings, from about 20 to 20,000 Hz) into ten segments.

Many rating methods have been devised to permit comparisons of sounds having quite different spectra. Fortunately, the simplest method correlates with human response practically as well as the more complex methods. This method consists of evaluating all of the frequencies of a sound in accordance with a weighting that progressively and severely deemphasizes the importance of frequency components below 1000 Hz, with mild deemphasis above 5000 Hz. This type of frequency weighting reflects the fact that human hearing is less sensitive at low frequencies and extreme high frequencies than in the frequency midrange.

The weighting curve described above is called "A" weighting, and the level so measured is called the "A-weighted sound level", or simply "A-level".

The A-level in decibels is expressed "dBA"; the appended letter "A" is a reminder of the particular kind of weighting used for the measurement. In practice, the A-level of a sound source is conveniently measured using a sound level meter that includes an electrical filter corresponding to the A-weighting curve. All U.S. and international standard sound level meters include such a filter. Typical A-levels measured in the environment and in industry are shown in Figure A-1.

Although the A-level may adequately describe environmental noise at any instant in time, the fact is that the community noise level varies continuously. Most environmental noise includes a conglomeration of distant noise sources which

creates a relatively steady background noise in which no particular source is identifiable. These distant sources may include traffic, wind in trees, industrial activities, etc. These noise sources are relatively constant from moment to moment, but vary slowly from hour to hour as natural forces change or as human activity follows its daily cycle. Superimposed on this slowly varying background is a succession of identifiable noisy events of brief duration. These may include nearby activities or single vehicle passages, aircraft flyovers, etc., which cause the environmental noise level to vary from instant to instant.

To describe the time-varying character of environmental noise, the statistical noise descriptors L10, L50, and L90 are commonly used. The L10 is the A-weighted sound level equaled or exceeded during 10 percent of a stated time period. The L10 is considered a good measure of the "average peak" noise. The L50 is the A-weighted sound level that is equaled or exceeded 50 percent of a stated time period. The L50 represents the median sound level. The L90 is the A-weighted sound level equaled or exceeded during 90 percent of a stated time period. The L90 is used to describe the background noise.

As it is often cumbersome to describe the noise environment with these statistical descriptors, a single number descriptor called the Leq is also widely used. The Leq is defined as the equivalent steady-state sound level which in a stated period of time would contain the same acoustic energy as the time-varying sound level during the same time period. The Leq is particularly useful in describing the subjective change in an environment where the source of noise remains the same but there is change in the level of activity. Widening roads and/or increasing traffic are examples of this kind of situation.

In determining the daily measure of environmental noise, it is important to account for the difference in response of people to daytime and nighttime noises.

During the nighttime, exterior background noises are generally lower than the daytime levels. However most household noise also decreases at night and exterior noises become very noticeable. Further most people are sleeping at night and are very sensitive to noise intrusion.

To account for humar sensitivity to nighttime noise levels a descriptor, Ldn, (day-night equivalent sound level) was developed. The Ldn divides the 24-hour day into the daytime of 7 am to 10 pm and the nighttime of 10 pm to 7 am. The nighttime noise level is weighted 10 dB higher than the daytime noise level. The Ldn, then, is the A-weighted average sound level in decibels during a 24-hour period with 10 dBA added to the hourly Leqs during the nighttime. For highway noise environments the Leq during the peak traffic hour is approximately equal to the Ldn.

The effects of noise on people can be listed in three general categories:

1) subjective effects of annoyance, nuisance, dissatisfaction;
2) interference with activities such as speech, sleep, learning;
3) physiological effects such as startle, hearing loss.

The sound levels associated with environmental noise, in almost every case, produce effects only in the first two categories. Unfortunately, there is as yet no completely satisfactory measure of the subjective effects of noise, or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance, and habituation to noise over differing individual past experiences with noise.

Thus, an important parameter in determining a person's subjective reaction to a new noise is the existing noise environment to which one has adapted: the so-called "ambient" noise. "Ambient" is defined as "the all-encompassing noise associated with a given environment, being a composite of sounds from many sources, near and far". In general, the more a new noise exceeds the previously existing ambient, the less acceptable the new noise will be judged by the hearers.

With regard to increases in noise level, knowledge of the following relationships will be helpful in understanding the quantitative sections of this report:

a) Except in carefully controlled laboratory experiments, a change of only 1 dBA cannot be perceived.
b) Outside of the laboratory, a 3-dBA change is considered a just-noticeable difference.
c) A change in level of at least 5 dBA is required before any noticeable change in community response would be expected.
d) A 10-dBA change is subjectively heard as approximately a doubling in loudness, and would almost certainly cause an adverse change in community response.

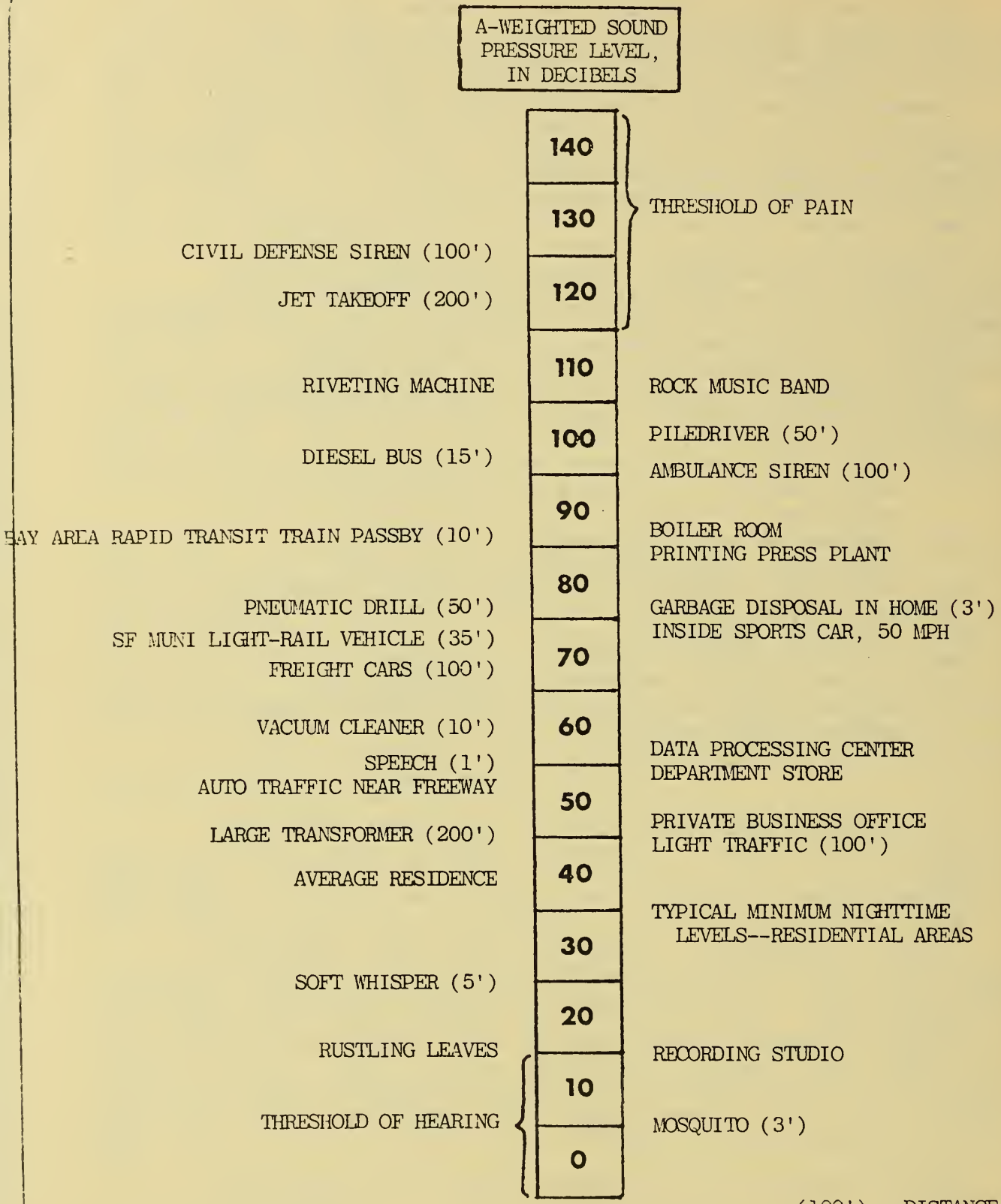


FIGURE A-1: TYPICAL SOUND LEVELS MEASURED IN THE ENVIRONMENT AND INDUSTRY

12/81

APPENDIX D

1. COMMERCIAL SPACE IN SAN FRANCISCO

Downtown San Francisco is the office center of the Bay Area. There are approximately 59.6 million square feet of office space in San Francisco.[2] Space in major buildings downtown has been added at a rate of 1.8 million square feet per year during the early 1970s and at a rate of 1.5 million square feet per year during the late 1970s (Table 1, page A-46). For the decade as a whole, the average rate has been 1.6 million square feet annually.

An additional 12.7 million square feet of office space will be added when the 37 high-rise buildings already approved as of June 1981, are built. Of this total, it is anticipated that 2.3 million square feet will be completed in 1981 and 3.3 million square feet in 1982 (Table 2, page A-47). The rest are proposed for completion over the 1983-1985 period. Another 10.9 million square feet of office space would be added if the 31 projects proposed or under review, as of June 1981, were all eventually built.

The vacancy rate in downtown office buildings was 2.3% in May 1980 and has been declining - from 8.9% in 1977 to 4.2% in 1978 to 2.6% in 1979.[3] Currently, the vacancy rate for modern air-conditioned high-rises in the Financial District approaches zero percent.[4] Most space currently under construction is already pre-leased.

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[1]This report is based on data prepared by Recht Hausrath and Associates for 101 Montgomery EIR, EE 80.26, certified May 7, 1981 and Recht Hausrath and Associates, Unpublished report, Economic Analysis, Russ Tower Office Building, a copy of which is available for review at San Francisco Office of Environmental Review.

[2]Department of City Planning, Statistical Update on Citywide Office Development, 1 May 1981, Table 1.

[3]Building Owners and Managers Association (BOMA), telephone communication, 24 June 1981. May 1981 data are not yet available. BOMA's vacancy rate is estimated based on their survey of office buildings, including newer, older, smaller, and larger space.

[4]Edwards, Andrew W., Coldwell Banker Commercial Real Estate Services, "Commercial Real Estate Is In Short Supply in San Francisco," San Francisco Chronicle, June 28, 1981, p. TC3. The Office Network, Inc., National Office Market Report, Spring/Summer 1981 indicates a vacancy rate of 0.4% for office buildings in downtown.

TABLE 1
OFFICE BUILDING CONSTRUCTION AND CONVERSION IN SAN FRANCISCO
AS OF NOVEMBER 1, 1981 IN GROSS SQUARE FEET

Year	Total Gross Sq. Ft. Completed	5-Year Total	5-Year Annual Average	Cumulative Total All Office Bldg.	All Downtown Office Buildings
Pre-1960		(Net)(3)	(Net)(3)	28,145,000(1)	24,175,000(2)
1960	1,183,000				
1961	270,000				
1962	--				
1963	--				
1964	1,413,000				
		2,866,000	573,200		
1960-1964		(2,580,000)	(516,000)	30,725,000	26,754,000(3)
1965	1,463,000				
1966	973,000				
1967	1,453,000				
1968	1,234,000				
1969	3,256,000				
		8,379,000	1,675,800		
1965-1969		(7,541,000)	(1,508,000)	38,266,000	34,295,000
1970	1,853,000				
1971	--				
1972	1,961,000				
1973	2,736,000				
1974	2,065,000				
		8,615,000	1,723,000		
1970-1974		(7,753,000)	(1,550,000)	46,019,000	42,048,000
1975	536,000				
1976	2,429,000				
1977	2,660,000				
1978	--				
1979	2,532,000				
		8,157,000	1,631,400		
1975-1979		(7,341,000)	(1,468,000)	53,360,000	49,389,000
1980	1,284,000				
1981	3,138,000			57,340,000	53,369,000
Under Construction					
82/84	5,600,000	10,022,000	2,004,000		
1980-1984		(9,020,000)	(1,804,000)	62,380,000	58,409,000
Approved Projects	3,113,000			65,182,000	61,211,000

Source: Department of City Planning records
(1) Source: S.F. Downtown Zoning Study - Working Paper No. 1, January 1966, Appendix, Table 1, Part 1. For pre 1965, includes the area bounded by Vallejo, Franklin, Central Skyway, Bryant and Embarcadero. Also includes 1/3 of mixed use retail/office. For post 1964, includes the entire city.
(2) Gross Floor Space for downtown offices are included for the following functional areas: Financial, Retail, Hotel, Jackson Square, Golden Gateway, Civic Center, South of Market, and Outer Market Street as defined in the 1/66 report. For post 1964, the entire area east of Franklin is included.
(3) Net equals 90% of (gross). Net new space is added at an increase factor of 90%, since it is assumed that space equal to 10% of a new building is demolished to make land available for the new replacement building.

TABLE 2
MAJOR DEVELOPMENT PROPOSALS UNDER CONSTRUCTION OR ACTIVE REVIEW
WITHIN THE DEPARTMENT OF CITY PLANNING[1] OCTOBER 1981

	Office		Hotel		Housing	
	No. Projects	Gross Sq. Ft.	No. Projects	Rooms	No. Projects	Units
Formal Review	51	9,336,000	6	2,770	29[4]	2,754
(EE or BPA Filed / Building Permit Filed)	(22)	(4,680,000)	-	(-0-)	-	(306)
Approved	15 (2)	3,081,500	4	2,194	6	559
Under Construction	16[3]	6,061,000	2	243	3	1,023
Total	82	18,478,000	12	5,207	39	4,336

(1) Redevelopment Agency Projects are only reflected in the "Under Construction" category. Does not include YBC or South Beach Redevelopment Proposals.
(2) Does not include Bank of America Data Center for 1.3 million square feet.
(3) Does not include 8 projects totaling 2,484,000 gross square feet which have/will come on line in 1981.
(4) Includes 7 mixed use office/residential projects totaling approximately 1,000 units.

Rents in premium office space range in 1981 from about $22 to $36 per square foot per year, with the higher rents for space in newer buildings.[1] Space on the upper floors of new, top-quality buildings that will go on the market in 1981 are expected to command rents of up to $42 per square foot per year. Downtown office rents have been increasing rapidly. Estimates indicate they are rising by 1 to 2% per month.[2]

Consistently low vacancy rates and rapidly rising rents suggest that demand for space is strong and that the construction of new office space in San Francisco has failed to keep pace with growing demand. Because of this backlog, demand for office space in the next several years will continue to reflect both the growth of office employment and the cumulative shortage of space that now exists.

Retail space in downtown office buildings rents for about $24 to $36 per square foot per year. Vacant retail space in the Financial District is as much a problem to locate as is vacant office space.

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[1] 101 Montgomery Street FEIR, EE 80.26, 1981, p. 253. Rents quoted here are gross rents. Also see The Office Network, Inc., National Office Market Report, Spring/Summer 1981, which quotes San Francisco office rents for Class A space in the range of $24-$36 per square foot per year for existing buildings, and $24-$40 for buildings under construction.

[2] Recht Hausrath and Associates; and Marcene Henrikson, "No Place to Grow," San Francisco Business, May 1981, pp. 6-10.

2. HOUSING[1]

When new jobs become available in San Francisco, people will become employed in the city who were not employed there before. Those newly employed could have lived either in San Francisco or outside the city before securing their employment. As a result of getting a new job those living outside of the city either could continue to live there or they could move into San Francisco.

Those who move into San Francisco as a result of job growth can be referred to as the "movers." This is the group that is responsible for the housing impact of downtown development. Its size is estimated to be 15 to 30% of the people newly employed in San Francisco as a result of job growth.

Because the proposed 201 Spear Street Office Building would increase San Francisco employment by 1,048 jobs, 157 to 420 workers would move into the City as a result of the project. It is estimated that there are an average of 1.4 San Francisco workers in each San Francisco household that contains downtown workers.[2] Therefore, the prject would result directly in about 112 to 233 households moving into San Francisco.

The estimates above are of those workers who would live in San Francisco only because of the new jobs due directly to the project. Without these new jobs they would not live in San Francisco. The remaining 70 to 85% of the 1,048 workers would

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[1]The following discussion largely is excerpted from 101 Montgomery EIR, EE 80.26, certified May 7, 1981 and Recht Hausrath and Associates, Unpublished report, Economic Analysis Russ Tower Office Building, a copy of which is available for review at San Francisco Office of Environmental Review.

[2]This estimate is derived by assuming, based on the SPUR study, that the workers who move will be roughly equally divided between married and single workers. For married workers, San Francisco workers per household were estimated based on the labor force participation rates of spouses of employed people and adjustments for unemployment and the distribution of employed San Francisco residents between jobs inside and outside San Francisco. For unmarried workers, it was assumed that half of them have another adult in their household. Using the labor force participation rates of single people, and making the same adjustments as in the case of spouses, an estimate of the number of San Francisco workers in unmarried households was derived (U.S. Department of Labor, Bureau of Labor Statistics, "Marital and Family Characteristics of the Labor Force, March 1979," Special Labor Force Report 237, January 1981; San Francisco Planning and Urban Renewal Association, Impact of Intensive High Rise Development on San Francisco, June, 1975.)

be either people who live outside San Francisco and choose not to move into the City, or people who already live in San Francisco.

The number of "movers" is estimated indirectly by estimating the size of 2 other groups for which there are better data.[1] These 2 groups are:

- The percent of newly employed people who, after getting their jobs, live in San Francisco. This group is estimated to be in the range of 25 to 35% of those newly employed. This includes both those who move into the city because of jobs and those who already live in San Francisco when hired and continue to reside there.

- The percent of people newly employed in San Francisco who, before getting their jobs, already lived in San Francisco. This group is estimated to be between 5 and 10% of those newly employed. These are San Francisco residents who, before getting San Francisco jobs, either did not work or worked outside San Francisco.

The percent of people who move into San Francisco as a result of the new employment is derived by subtracting the second group above from the first. The resultant estimate of housing impact reflects the range of possibilities after combining the sets of estimates identified above. Those who move into San Francisco as a result of downtown job growth are estimated to be 15 to 30% of the people newly employed. The household pattern of these workers is estimated to include 1.4 San Francisco workers per household with a downtown job. Thus, the number of housing units that would be required by those who move into San Francisco would be approximately equal to 11 to 21% of the number of new jobs created in San Francisco.

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[1] For methodology used to estimate housing impact, see 101 Montgomery Street FEIR, EE 80.26, Appendix C, "Housing Concerns Associated With San Francisco Job Growth," pp. 300-309). Also see Appendix B to this EIR.

It is estimated that about half of all downtown worker households living outside the city could afford to buy a $100,000 house. About 35% could afford a $125,000 house and about 15% could afford $150,000 or more.[1] Because those households that move into the city might not be representative of all households in this pool (they might, instead, be concentrated either among those with a greater or a lesser ability to buy a house), these estimates may not reflect accurately the prices of housing that will be demanded by those who actually do move to the city. If these figures do represent the purchasing ability of those who move to San Francisco, roughly half of them would be expected either to rent or purchase units priced under $100,000, and about half would be expected to purchase housing priced over $100,000.

To the extent the city's housing stock is not expanded at prices affordable to the movers and in sufficient numbers to accommodate them, these workers who move into San Francisco would compete with current residents and others for the available stock of housing. In the process, prices and rents would, in theory, rise more than they otherwise would have. As a result, some renters might not be able to afford the higher rents and would be forced to move. Homeowners would not necessarily be displaced because increased housing prices would not affect their mortgage payments. Higher prices also could mean that other future buyers could find it more difficult to buy a house.

Downtown job growth would enable a greater number and a higher percentage of San Franciscans to work downtown. This is

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[1]The purchasing ability of workers was estimated based on the following data sources and assumptions: 1) data from the SPUR study on the marital status, occupations and incomes (adjusted to 1981) of downtown workers; 2) data on the number of workers per household (see footnote 2, page 5); 3) data from the ABAG Bay Area Housing Profile on the percentage of non-San Francisco households in the Bay Area that own a house; 4) data on average Bay Area housing prices and rates of housing price increases during the 1970s; 5) assumptions about the relative likelihood of single and married workers to own a house, clerical and non-clerical workers to own a house, and clerical and non-clerical workers to be married; 6) the assumption that 15% of all homeowners sell their houses each year. (San Francisco Planning and Urban Renewal Association, Impact of Intensive High Rise Development on San Francisco, June 1975; Association of Bay Area Governments, "1970-1975 San Francisco Bay Area Housing Profile," November 1977; Real Estate Research Council of Northern California, Northern California Real Estate Report, Vol. 32, No. 3, October 1980.) For more detail, see 101 Montgomery Street FEIR, EE 80.26, p. 203.

because, as employment downtown grows, the pool of jobs available to residents will include a greater percentage of jobs downtown and so it will be more likely that they will hold downtown jobs. The more employment growth there is, the larger will be the percentage of residents who work downtown.

For example, if it is assumed that there are 60 million square feet of office space in 1980, then it appears that 23 percent of employed San Francisco residents currently hold downtown office jobs. If, between 1980 and 1990 downtown office space grows by 20 million square feet, that percentage would increase to between 26.5 and 28.3 percent. If the growth is 10 million square feet, the percentage of employed residents working in downtown office jobs also would increase, but by less: to between 24.2 and 25.1%.

Significantly, if there were no growth in downtown office space, in 1990 a smaller percentage of employed San Franciscans--21.9% --would hold downtown office jobs than was true in 1980. This would occur because increases in the number of employed city residents resulting from increased labor force participation rates would not be matched by increases in downtown employment. Thus, a greater proportion of employed San Francisco residents would have to find jobs outside San Francisco or elsewhere in San Francisco.

Newly employed residents (25-35% of job growth) include the people who were already city residents (5-10%) and people who move into the city as a result of getting jobs (15-30%). Job growth downtown would increase the size of both of these groups. The relative size of one group to the other will be determined by the cumulative amount of job growth and the growth of the housing stock, both in San Francisco and elsewhere in the region. The more job growth there is and the more housing stock growth in San Francisco, the larger will be the number of movers relative to those newly employed who already live in San Francisco.

TABLE 3
PROJECTED EFFECTS OF DOWNTOWN OFFICE DEVELOPMENT
ON REGIONAL HOUSING MARKETS

Housing Market	Residency of San Francisco Office Employees[1]	Housing Units[2] Demanded	Household Cumulative Demand[3] 1979-1985	Net Housing[4] Stock Growth 1980-1981	Project Demand as % of Growth 1980-1985
San Francisco	40%	300	17,200	5000-6500	4.0 to 5.2
North Bay	12%	90	6,200	30,700-37,500	0.2 to 0.3
Penninsula	18%	140	8,800	57,500-70,300	0.2 to 0.2
East Bay	30%	230	16,000	47,000-57,400	0.3 to 0.4
TOTAL	100%	760	48,200	140,200-171,700	0.4 to 0.5

[1]Based on adjusted trip generation data, page 58 of the present study.

[2]Project workforce of 1,050 and a ratio of 1.8 workers per household.

[3]Based on projected San Francisco housing demand created by downtown office development in Sedway/Cooke, Downtown San Francisco Conservation and Planning Program, Phase I, October, 1979 p. 47, 48.

[4]Based on straight-line projections of rates of building permit activity from 1975 to 1979 reflected in ABAG, Housing Activity Report, No. 3, May 1981.